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PROCEEDINGS

NATIONAL ADVISORY BOARD COUNCIL

July 27 - 30, 1970

Rapid City, South Dakota
Miles City, Montana

March 3, 1849

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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CONTENTS

	Page
General Statement	1
Attendance	1
Proceedings, Morning Session, July 27	3
Proceedings, Afternoon Session, July 27	4
Proceedings, Morning and Afternoon, July 28	5
Proceedings, Morning and Early Afternoon, July 29	5
Proceedings, Late Afternoon, July 29	5
Proceedings, Morning and Early Afternoon, July 30	6
Certification of Cochairman	7
Roster of Membership, NABC	Appendix No. 1
Call to Meet	Appendix No. 2
Designation of Cochairman	Appendix No. 3
Message of Edwin Zaidlicz, State Director, Montana, Bureau of Land Management	Appendix No. 4
Message of Hon. Jack P. Allmon, Mayor Rapid City, South Dakota	Appendix No. 5
Address of Harrison Loesch, Assistant Secretary of the Interior	Appendix No. 6
Report of Boyd L. Rasmussen, Director, Bureau of Land Management	Appendix No. 7
Report of Leonard Horn, Council member, Colorado	Appendix No. 8
Remarks of Eldon Smith, former Council member, Montana	Appendix No. 9
Remarks of A. L. Hormay, Range Conservationist, Bureau of Land Management	Appendix No. 10

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Remarks of Eugene V. Zumwalt, Assistant Director, Bureau of Land Management . . . . Appendix No. 11

Policy Statement on Pesticides . . . . Appendix No. 12

Remarks of Howard W. Harris, Chairman, Off Road Vehicle Advisory Council, Bureau of Land Management, California . . . . Appendix No. 13

Remarks of Arnold J. Silverman, Professor of Geology, University of Montana . . . . Appendix No. 14

Remarks of Dwain Winters, Chairman, Student Council on Pollution and the Environment, Missouri River Basin . . . . Appendix No. 15

Remarks of Donald G. Balmer, Chairman, Department of Political Science, Lewis and Clark College . . . . Appendix No. 16

Report of Curt Berklund, Assistant to the Assistant Secretary for Public Land Management, Department of the Interior . . . . . . Appendix No. 17

Tour Plan: Battlecreek Allotment . . . . Appendix No. 18

Statement of Advisory Actions . . . . Appendix No. 19

PROCEEDINGS OF THE NATIONAL ADVISORY BOARD COUNCIL
Rapid City, South Dakota and Miles City, Montana
July 27 through 30, 1970

The National Advisory Board Council met at and in the vicinity of Rapid City, South Dakota and Miles City, Montana on July 27 through 30, 1970. The theme of the meeting was, "The Environmental Thrust -- Its Implications for Public Land Management." The meeting consisted of business sessions on July 27 and 29, including an executive session on the latter date, and tour sessions on July 28, 29, and 30. All sessions except the executive session were open to the public. The meeting was conducted by Gene J. Etchart, Chairman, and Boyd L. Rasmussen, Cochairman.

National Advisory Board Council, Members and Alternates:

L. Robert Anderson, Utah, public land law
Alden K. Barton, Utah, sheep
J. Robb Brady, Idaho, public information media
Clarence A. Brimmer, Wyoming, public land law
Brunel Christensen, California, cattle
Theodore R. Conn, Oregon, wildlife
Fermin M. Echeverria, Arizona, sheep
Gene J. Etchart, Montana, cattle
Harold F. Evans, Wyoming, wildlife
Marshall Everheart, Idaho, wildlife
Kumen S. Gardner, Utah, cattle
Henry C. Gerber, Oregon, cattle
Fred A. Gross, New Mexico, wildlife
Homer Harrison, California, wildlife
Eldon P. Harvey, New Mexico, cattle
John W. Hay, Jr., Wyoming, sheep
Andrew G. Hellstern, Montana, sheep
Leonard Horn, Colorado, cattle
Leonard Hoskins, Nevada, wildlife
Harold D. Kreft, Arizona, real estate development
Max T. Layton, Arizona, wildlife
Ted Lee, Arizona, cattle
Ray Lincoln, Idaho, sheep
Robert C. Lynam, Montana, wildlife
Troy M. Miller, Utah, wildlife
Gareth C. Moon, Montana, forestry
Rolland K. Patrick, Idaho, cattle
Clarence H. Quinlan, New Mexico, sheep
Lloyd Rea, Oregon, county government
Gerhard N. Rostvold, California, urban-suburban affairs
Loyd Sorenson, Nevada, sheep
Nick Theos, Colorado, sheep
Robert V. Thompson, Wyoming, cattle
Mark M. Wagner, Colorado, wildlife
Harlan H. Wendt, Oregon, sheep
Jack Wilbur, Alaska, statewide
Ray Young, Nevada, cattle

For convenience of reference, a roster of the principle members of the National Advisory Board Council for 1970, arranged alphabetically by surname and showing mailing addresses appears as Appendix No. 1 to these proceedings.

Department of the Interior

Harrison Loesch, Assistant Secretary for Public Land Management
Curt Berklund, Staff Assistant to the Assistant Secretary

Bureau of Land Management

Boyd L. Rasmussen, Director
Irving Senzel, Assistant Director, Legislation and Plans
George L. Turcott, Assistant Director, Technical Services
Eugene V. Zumwalt, Assistant Director, Resources
John Mattoon, Chief, Office of Information
George D. Lea, Chief, Division of Range
Jerry A. O'Callaghan, Chief, Division of Cooperative Relations
Harold K. Johnson, Cooperative Relations Specialist
Ed W. Parker, Chief, Branch of Current Information
A. L. Hormay, Range Conservationist
Garth Rudd, Director, Denver Service Center
Edward G. Bygland, Director, Portland Service Center
Burton W. Silcock, State Director, Alaska
Joe T. Fallini, State Director, Arizona
J. Russell Penny, State Director, California
Edgar I. Rowland, State Director, Colorado
William L. Mathews, State Director, Idaho
Edwin Zaidlicz, State Director, Montana
Nolan F. Keil, State Director, Nevada
W. J. Anderson, State Director, New Mexico
Archie D. Craft, State Director, Oregon
Robert D. Nielson, State Director, Utah
Daniel P. Baker, State Director, Wyoming
Charles E. Most, Assistant to State Director, Montana
James M. Linne, Chief, Division of Resource Program Management, Montana
Eugene H. Newell, Chief, Division of Lands & Minerals Program Management, Montana
Charles R. Cleary, Natural Resource Specialist, Montana
Rex Colton, District Manager, Miles City District
Jerry R. Hawkinson, Natural Resource Specialist, Miles City District
Gerald D. Hillier, Range Conservationist, Miles City District
Claude D. Roswurm, Manager, South Dakota Resource Area
Hyrum L. Wilson, Natural Resource Specialist, South Dakota Resource Area

and others of the staffs of the Montana State Office, the Miles City District Office, and the South Dakota Resource Area office.

Others in official attendance:

Jack P. Allmon, Mayor, Rapid City, South Dakota
Donald G. Balmer, Chairman, Department of Political Science, Lewis and Clark College
Vincent Crago, Rancher, Crago Brothers Allotment
Howard W. Harris, Chairman, Off Road Vehicle Advisory Council
Donald E. Ryerson, Animal and Range Science Department, Montana State University
Arnold J. Silverman, Professor of Geology, University of Montana
Eldon Smith, former member NABC, Montana
Dwain Winters, Chairman, SCOPE, Missouri River Basin

Proceedings, Morning Session, Monday, July 27

Pursuant to the Call to Meet issued by the Secretary of the Interior on June 18, 1970 (for which see Appendix No. 2), the National Advisory Board Council met at and in the vicinity of Rapid City and Belle Fourche, South Dakota, and Miles City and Billings, Montana, during the period July 27 through July 30, 1970. The meeting was conducted by Gene J. Etchart, Chairman, and Boyd L. Rasmussen, Cochairman (see Appendix No. 3 for Designation of Cochairman).

The meeting began at 8:30 a.m. on Monday, July 27, 1970, in the Alex Johnson Hotel at Rapid City, South Dakota. Edwin Zaidlicz, State Director for Montana, Bureau of Land Management, welcomed the Council on behalf of the Bureau and made announcements regarding arrangements and facilities. The text of Mr. Zaidlicz' message is included as Appendix No. 4 to these proceedings.

Mr. Zaidlicz then introduced the Hon. Jack P. Allmon, Mayor of Rapid City, who welcomed the Council on behalf of the people of Rapid City and vicinity. Mayor Allmon's message is included as Appendix No. 5 to these proceedings.

Chairman Gene J. Etchart welcomed the Council, introduced the new members, and asked the old members to introduce themselves in turn, after which he introduced Harrison Loesch, Assistant Secretary for Public Land Management, Department of the Interior. Mr. Loesch set the keynote for the meeting with an address on the environmental thrust and its implications for public land management. The text of Mr. Loesch's address appears as Appendix No. 6 to these proceedings.

Boyd L. Rasmussen, Director, Bureau of Land Management, presented a report on the programs, progress, and problems of public land management, with emphasis on national concerns from a national perspective. The Director's report is included as Appendix No. 7 to these proceedings.

Leonard Horn, Council member from Colorado, and Eldon Smith, former Council member from Montana, discussed allotment management planning. The text of the remarks by Mr. Horn and Mr. Smith appears as Appendix No. 8 and Appendix No. 9, respectively, to these proceedings.

A. L. "Gus" Hormay, Range Conservationist, Bureau of Land Management, spoke on livestock as a tool of environmental management, a slide illustrated narration demonstrating soil, water, and forage improvement through rotation management of livestock grazing. The text of Mr. Hormay's narration appears as Appendix No. 10 to these proceedings.

The Council recessed for lunch at 12:30 p.m.

Proceedings Afternoon Session, Tuesday, July 27

Eugene V. Zumwalt, Assistant Director for Resources, Bureau of Land Management, spoke on the use of herbicides and pesticides in Bureau programs and discussed some of the concepts being implemented in watershed management. The text of Mr. Zumwalt's talk is included as Appendix No. 11 to these proceedings, and the policy statement of the Department of the Interior to which he referred is included as Appendix No. 12.

Howard W. Harris, Chairman of the Off Road Vehicle Advisory Council (Bureau of Land Management, California) presented an illustrated report on the control of destructive recreational practices, emphasizing particularly problems stemming from off-road vehicle use and demonstrating the need for regulated use. The text of Mr. Harris' narration appears as Appendix No. 13 to these proceedings.

Arnold J. Silverman, Professor of Geology, University of Montana, spoke on environmental protection through managing destructive mining practices, illustrating part of his talk with slides. The narrative of Dr. Silverman's talk is included as Appendix No. 14 to these proceedings.

Dwain Winters, Chairman of the Student Council on Pollution and Environment (SCOPE) for the Missouri River Basin, explained the concerns and involvement of youth with environmental matters. Mr. Winter's discussion appears as Appendix No. 15 to these proceedings.

Donald G. Balmer, Chairman, Department of Political Science, Lewis and Clark College, spoke on an academic view of advisory boards, exploring the various roles and functions of advisory groups. Dr. Balmer's talk is included as Appendix No. 16 to these proceedings.

A question and answer period followed the presentation of each of these papers. These have not been duplicated but are available for review in the files of the minutes of the meeting. The text of the statements appearing as appendices were prepared either from the texts submitted by the authors or the texts as transcribed by the recorder then edited by the authors. The only exception to this is Appendix No. 15 which was taken from the transcript and edited by Harold Johnson, Bureau of Land Management staff.

Proceedings, Morning and Afternoon, Tuesday, July 28

After viewing a preliminary working print of a film on allotment management planning, participants departed Rapid City at 8:30 a.m. The entire day was spent on tour of the Crago Brothers Battle Creek Allotment north of Belle Fourche, South Dakota. Several stops were made at various points of interest on the 22,000 acre ranch, where attendees observed and examined allotment management and rotational grazing methods and benefits derived therefrom particularly in terms of improved soil, water, and forage values. The tour was conducted and narrated by Donald E. Ryerson, Animal and Range Science Department, Montana State University, assisted by rancher Vincent Crago, and others of the University and the Bureau. The narration was not recorded. The tour plan appears as Appendix No. 17 to these proceedings.

Proceedings, Morning and Early Afternoon, Wednesday, July 29

Council members and other participants departed Belle Fourche at about 7:30 a.m. and travelled to the Bell Creek oil field near Biddle, in southeastern Montana. The remainder of the morning was spent in tour of the area, observing the facilities of the field, including a new pumping station and a planned community housing employees and their families, as well as numerous producing wells and drilling operations. The narration of the tour was not recorded.

Proceedings, Late Afternoon, Wednesday, July 29

The Council meeting resumed in business session at the Red Rock Village Inn in Miles City, Montana, at approximately 2:45 p.m. Curt Berklund, Staff Assistant to the Assistant Secretary for Public Land Management, began the session with a report on the Report of the Public Land Law Review Commission. Mr. Berklund's report appears as Appendix No. 18 to these proceedings. Following, Assistant Secretary Loesch commented on points raised by Council members.

The Council entered executive session. Reelected as officers by unanimous vote were Gene J. Etchart, Chairman, Ray Lincoln, Vice Chairman, and Kumen S. Gardner, Secretary-Treasurer.

Cochairman Rasmussen commented briefly on the purpose and functions of the Council and invited suggestions directed toward improving the group's advisory role. Then, Assistant Secretary Loesch spoke on the purpose and functions of the Council, with particular reference to relationships between the Council and the Secretariat, after which he discussed related topics with various members.

Next, Chairman Etchart requested Council members to submit to him comments and suggestions regarding the activities and functions of the Council. He volunteered to consolidate and summarize them.

Individual Council members offered several resolutions for Council consideration, discussion, and adoption. A statement of advisory actions adopted by the Council appears as Appendix No. 19 to these proceedings.

The Council also voted to commend the long and valued service to the Council by Judge Dan H. Hughes, member from Colorado, 1941-1968, and Chairman, 1961-1965.

Proceedings, Morning and Early Afternoon, Thursday, July 30

Council members and other participants departed Miles City for Billings, via Colstrip, at 8:30 a.m. In the vicinity of Colstrip, Montana, the group toured strip mining operations and mined-land reclamation projects, viewing the effects of mining on other resource values and the restoration possible with good reclamation practices. The narration of the tour was not recorded.

I certify that I attended the proceedings of the National Advisory Board Council herein reported and that this report is an accurate summary account of the matters discussed and the conclusions reached. The detailed proceedings of this meeting are of record in this office where they may be examined by interested parties.

[illegible] 2 1970

Date

Boyd L. Rasmussen

Boyd L. Rasmussen
Director, Bureau of Land Management
Washington, D. C
Cochairman

Appendix No. 1

1970 NATIONAL ADVISORY BOARD COUNCIL
(roster alphabetically by surname)

Mr. L. Robert Anderson
P. O. Box 1057
Monticello, Utah 84535

Mr. Alden K. Barton
1795 Logan Avenue
Salt Lake City, Utah 84108

Mr. J. Robb Brady
Route 3, Sunnyside Road
Idaho Falls, Idaho 83401

Mr. Clarence A. Brimmer
P. O. Box 999
Rawlins, Wyoming 82301

Mr. Brunel Christensen
Likely, California 96116

Mr. V. P. Cline
P. O. Box 599
Denver, Colorado 80201

Mr. Theodore R. Conn
621 North 1st Street
Lakeview, Oregon 97630

Mr. Fermin M. Echeverria
520 East Greenway Road
Phoenix, Arizona 86401

Mr. Gene J. Etchart
Box 429
Glasgow, Montana 59230

Mr. Harold F. Evans
330 Lincoln Street
Lander, Wyoming 82520

Mr. Marshall Everheart
250 West Main Street
Jerome, Idaho 83338

Mr. Henry C. Gerber
329 High Street
Klamath Falls, Oregon 97601

Mr. W. Howard Gray
1031 Skyline Boulevard
Reno, Nevada 89502

Mr. Fred A. Gross
2916 Chama N.E.
Albuquerque, New Mexico 87110

Mr. Homer Harrison
1700 Los Robles Drive
Bakersfield, California 93306

Mr. Eldon P. Harvey
El Paso National Bank
Box 140
El Paso, Texas 79900

Mr. John W. Hay, Jr.
502 B Street
Rock Springs, Wyoming 82901

Mr. Swend R. Holland
Gilt Edge Route
Lewistown, Montana 59457

Mr. Leonard Horn
Wolcott, Colorado 81655

Mr. Leonard Hoskins
P. O. Box 1087
Elko, Nevada 89801

Mr. Harold D. Kreft
2702 Ricca Drive
Kingman, Arizona 86401

Mr. John B. Laxague
Cedarville, California 96104

Mr. Max T. Layton
617 Main Street
Safford, Arizona 85546

Mr. Ted Lee
Thatcher, Arizona 85552

Appendix No. 1
(cont.)

Mr. Francis A. LeSourd
1300 Northern Life Tower
Seattle, Washington 98101

Mr. Ray Lincoln
546 Sunrise Boulevard North
Twin Falls, Idaho 83301

Mr. Robert C. Lynam
501 Palmer Street
Miles City, Montana 59301

Mr. Troy M. Miller
121 North Main Street
Brigham City, Utah 84302

Mr. Gareth C. Moon
2705 Spurgin Road
Missoula, Montana 59801

Mr. Rolland K. Patrick
Castleford, Idaho 83321

Mr. Clarence H. Quinlan
Antonito, Colorado 81120

Judge Lloyd Rea
Baker County Courthouse
Baker, Oregon 97814

Dr. Gerhard N. Rostvold
1045 Yale Avenue
Claremont, California 91711

Mr. Loyd Sorenson
591 13th Street
Elko, Nevada 89801

Mr. Nick Theos
Meeker, Colorado 81641

Mr. Robert V. Thompson
Big Piney, Wyoming 83113

Mr. Mark M. Wagner
2871 Sharon Place
Grand Junction, Colorado 81501

Mr. Harlan H. Wendt
Bridgeport, Oregon 97819

Mr. Jack Wilbur
1013 Gilmore Street
Fairbanks, Alaska 99701

Mr. J. E. Worthington
56 North 3rd East
Nephi, Utah 84648

Mr. Roy Young
P. O. Box 588
Elko, Nevada 89801

March 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Appendix No. 2

June 18, 1970

Memorandum

To: Members, National Advisory Board Council

From: Secretary of the Interior

Subject: Call to Meet, National Advisory Board Council

To review, consider, and advise on current programs for the management of public lands and resources, the National Advisory Board Council is called to meet at and in the vicinity of Rapid City and Belle Fourche, South Dakota, and Miles City and Billings, Montana, on July 27 through July 30, 1970. Your attendance is requested.

The Director, Bureau of Land Management, will provide further details as plans develop.

/s/ Walter J. Hickel

Appendix No. 3

March 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

June 18, 1970

Memorandum

To: Director, Bureau of Land Management

From: Secretary of the Interior

Subject: Designation of Co-chairman, National Advisory Board Council

Pursuant to the regulations of the Department of the Interior set forth in 43 CFR 4114.3-1, the Director, Bureau of Land Management, or his designee, is designated as the Co-chairman of the National Advisory Board Council at its meeting to be held at and in the vicinity of Rapid City and Belle Fourche, South Dakota, and Miles City and Billings, Montana, beginning on or about July 27, 1970.

/s/ Walter J. Hickel

MESSAGE OF WELCOME

Remarks of Edwin Zaidlicz, State Director, Montana, Bureau of Land Management, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Secretary Loesch, Director Rasmussen, Mayor Allmon, NABC members, fellow BLMers, and honored guests.

On behalf of the BLM team of the Dakotas, Minnesota, and Montana, I welcome you to what I am sure will be a fruitful and enjoyable Council deliberation here in Marlboro Country. We are grateful and proud of the opportunity to be your host.

This is big country, and BLM's responsibilities here are well known. We accept these responsibilities, and we hope that with the help of the National Advisory Board Council, we can agree on ways of handling them.

The fact that we are all here for this meeting represents, in my opinion, one of the best examples of the kind of action that President Nixon has called for in order to make the Federal Establishment more responsive to local needs.

We are especially pleased that Secretary Harrison Loesch could take the time to be with us for this meeting and the tour that follows. Secretary Loesch has been involved in many of our decisions as a private citizen; now he is involved as an Assistant Secretary of the Interior. We hope this meeting and trip will show him, and you, the many problems with which we are faced, as well as the opportunities we see before us. All of these -- both problems and opportunities -- are activities in which we can jointly participate.

Admittedly, I am biased, but I am proud of the accomplishments of our people here, and I know you will be very pleased with the fine western hospitality of the Dakotans and the Montanans. My staff and I are here to make this an enjoyable and memorable tour for each of you; and if there's anything we can do to help you that's moral and legal, please call on us.

I'd like to take just a minute and identify some of our men who will be bull cooking this tour -- Jim Linne, Claude Roswurm, Ken McDowell, and the boss there, Rex Colton, the District Manager. So if you run into any problems or need any help, get the guys with the green tags.

Appendix No. 4
(cont.)

Since this is the height of the tourist season and reservations and rooms are at a premium, it's very critical that we try to stay on some kind of a schedule, and this is particularly true of motel reservations.

I'd like to take care of just a few housekeeping chores here to get them out of the way before we get on with the main part of the meeting.

As you know, we're competing with the Black Hills Passion Play. I think there's something to the story there, but I'm not going to go into it.

There are a lot of eating places which will be pretty well overloaded, so I strongly recommend that you try places other than just this hotel dining room. While it's very good, the service is a little slow, particularly for a large number. For noon lunch I would ask that you try some of the other spots, as there are a number of them right around the building.

The schedule is tight, and we hope that we can meet it.

A number of the ladies have asked if they can have an opportunity to visit Mount Rushmore. At 1:30 the ladies and the children who are interested in making the tour of Mount Rushmore, meet at the reservation desk downstairs and we'll have some fellows there take them out. The tour will probably run a minimum of three hours, possibly three and a half hours.

For the benefit of others who might like to see Mount Rushmore, this evening there are some good Grayline tours set up. There is one they call Tour Five, it takes you out at 7:45 in the evening. The information is in the lobby.

One other thing, we'll have our coffee here at 10 and this afternoon at 3. Coffee will be brought in so that will save us some time.

I would strongly encourage you, after we get going on the tours, to dress informally, as it gets quite warm here.

This afternoon, after the adjournment at 4:45, we will have a group photograph. I ask that you hold tight after the adjournment for the group photograph.

One other thing, tomorrow morning we'll be checking out for the first part of our tour, so in addition to my suggestion about finding someplace other than just the dining room downstairs to eat, if it is possible, try to check out either tonight or early tomorrow.

We will have a cocktail hour, hosted by the Washington and State BLM chiefs, for you gentlemen from 6:30 to 7:30 tonight, and this will be held in the Crystal Room just down the hall. We ask that you wear your name tags as these will be your admittance.

At this time, I'd like to introduce to you The Honorable Jack P. Allmon, the Mayor of Rapid City, South Dakota.

MESSAGE OF WELCOME

Remarks of the Hon. Jack P. Allmon, Mayor of Rapid City, South Dakota, to the National Advisory Board Council, July 27, 1970.

State Director Ed, Chairman Gene.

Apparently accommodations here leave something to be desired, from a few little remarks I heard about breakfast this morning. It takes a little time, but usually tours and conventions are not always in a big hurry anyway, and the other matters were probably taken care of first.

One of the great pleasures of being a mayor, I think, and mayor of any city, is the opportunity it gives them to bring the welcome of the city to a group such as this, and I want to bring my personal welcome to you, and also the welcome from the entire city of Rapid City.

Whether you've heard or not -- probably you have -- this mayor here is probably nationally known as one of the greatest fire fighters of any mayor we've probably had in the United States, as we had a little trouble here one time when 59 of our firemen resigned at one time, but I want to assure you now you're plenty safe. We have a new fire department -- almost new -- and it's a good one, and the mayor is the chief of that so you'll be in good shape to have a fire.

Now, if you haven't heard about it, why, it was quite an event for us here when we stayed into negotiations for a short time after they left.

The other part I'd like to talk to you about, I don't know how many of you brought your wives, there was something mentioned about morals. We have one night club where we have one of the entertainers who doesn't wear too many things, and there's been a note on my desk for some time in regard to a complaint about this, but I'm not going to do anything about it until after you leave, and it's one of our night clubs, so feel free to go out there if you like. The service for food, I think, would be real good too.

The other part, if you haven't been to Rapid City before, I would recommend that you not go on the north side of Main Street by yourselves. In fact, if you would stay on the south side and watch on the north side, you'll probably see one of the best shows you've seen in a long time in the evenings over there. But if you do straggle over on that side of the street, north main, in there, we have plenty of police, and if you do get in trouble by being over there, give me a call, or have the police call me, and if I can't get you out I'll get in with you. You get in trouble on that side of the street, as I say, and it's not too hard.

Now, the good part about what I'd like for you to see while you're here, by all means if you can, if you haven't, and if you have, go by and see Mount Rushmore again. It's one of the real high spots and one of the most visited spots in America. Regardless of how you feel with all of the corruption and riots and burning of the flags and using them for different things nowadays, when you go by and see these four great faces on the granite rock there, it does something to you, you stand and look at it for a few minutes and it will make you glad you're an American.

The other place -- I understand your schedule is quite tight and all -- but I always ask everyone if they at least have a few minutes to go by and see this great sculptor, Ziolkowski's Crazy Horse. This is going to be one of the finest tourist attractions that we'll have; it will probably be as great as Mount Rushmore. Not only do I like for you to see where this is going to be and the activity that's going on up there, but this is probably one of the greatest free enterprise projects of man that you'll ever run into in America today. The desire is to finish this himself with his own raising of the funds by donations from free enterprise. He has 10 children in this project up there and every one of them is doing some type of work. He's just recently been granted by the Caterpillar Company a $150,000 Cat with a lot of equipment on it, and it's really something to know this man, he's an unusual character, and he's rough and he's crude but still he's one of what I call one of the true Americans that's still left, and if you go by there it will be a wonderful thing for you to see while you're here. It isn't completed yet, but there is enough there so you can see what he's doing and all.

Now, last October we had quite an election in our community and this actually was the adopting or not adopting of the one-cent city sales tax, and we won that by a 66.8 margin, which was, we thought, real good; and the reason I mention it to you is that I hope you spend all the money you can because the city gets one cent of that in the sales tax, and the Lord knows we need it, and if we get more of the sales tax we can probably put on more help here in the hotel and probably give you better service the next time you come out.

Well, it's a great pleasure to have you with us, and like I say, I hope you enjoy it here. I notice that State Director Ed has mentioned for you to get in touch with him if there is anything he can do for you, and I likewise want to say that if there is anything we in the city can do to make your stay more enjoyable, and if there is anything I can do, please give me a ring while you're here and I assure you we'll do everything we possibly can to make your stay enjoyable so that you'll come back again. It's a great pleasure to have you here, and I hope your meeting is a successful one, which I think it will. If there is anything we have here, it's a lot of land, and we want to develop it and save it for the generations ahead. I want you to enjoy yourselves here, and have a great time.

Now, I have been asked to explain to you gentlemen which way is north. I don't know the significance of this, but anyway if you get lost, the north side of Main Street would be right over on that side of the street over there (Indicating). You go right down and don't cross the street, go up on the south side first. Apparently somebody's already been over there and found out what's happening. But that is the north side of Main Street, and both blocks just north of between Sixth and Seventh are probably the most active, but at Seventh and Eighth you get a little show too; so have your friends with you, and notify the police that you're going up there.

Thank you very much.

THE ENVIRONMENTAL THRUST -- ITS IMPLICATIONS FOR PUBLIC LAND MANAGEMENT

Address of Harrison Loesch, Assistant Secretary for Public Land Management, Department of the Interior, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Mr. Chairman, Distinguished Guests, Ladies and Gentlemen:

This is my first meeting with the National Advisory Board Council, but I do not feel like a stranger. I am acquainted with your fine work, and for many years I practiced law with--and before--your honored chairman, Judge Dan Hughes.

In my law practice I frequently represented various users of the public lands. In my current capacity I still have contact with the users, but I have a new client--the owners of the land . . . the American people. This, of course, includes the users.

Serving this new client gives me a considerable amount of responsibility for about 25 per cent of the American environment. It is an exciting and demanding responsibility, and I am proud to have it.

President Nixon gave an important new dimension to this responsibility--and to the responsibility we all have--on the first day of this year, when he signed the National Environmental Policy Act.

The President said the Decade of the Seventies is the "now or never" decade, when we must settle up long overdue accounts in our environment. He asked the leaders of this Administration to carry the word about the nature of this debt to all the American people.

Secretary Hickel has responded with clarity and force. So much so that the shoe is beginning to pinch on those who would like to continue resource use in ruinous ways. These people are raising the cry that a bunch of alarmists are loose in the land. They say environmentalists are impelled by hysteria.

Secretary Hickel has directly met this self-serving denunciation of conservationists. In a recent talk to an Arizona audience, the Secretary said: "Talk of permanent destruction of the environment is not the idle threat of an alarmist. The public has begun to realize that so-called standard operating procedures threaten to destroy the very quality of life we have struggled to create."

If anyone, anywhere, really has doubt about what we are doing to the environment, let him look to the example of mercury pollution in many of our states. This insidious form of pollution--newly found to be widespread--poses truly grave threats to people.

The National Environmental Policy Act is the important first step toward a quality environment. It is a clear signal the Nation will act to correct past mistakes. The Act asserts firmly that we shall use greater care in our treatment of the environment.

The exercise of this Act will be controversial. As in all issues of basic public import, there are--and will continue to be--divergencies of judgment. Even when a course of action is decided, there will be disagreement on points of emphasis and timing.

We should, therefore, keep in focus the basic purpose of the Act, expressed in Section 101(a). I quote:

" . . . It is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony . . . ."

To carry out this policy, the Act created an Environmental Quality Council, which reports to the President. Mr. Nixon called the Council the "keeper of our environmental conscience and a goad to our ingenuity."

In choosing the first chairman, President Nixon came to the Department of the Interior. He selected former Under Secretary Russell Train. Mr. Train's colleagues in leadership are: Robert Cahn, formerly of the Christian Science Monitor; and Gordon J. F. MacDonald, formerly of the University of California, Santa Barbara.

President Nixon intends that the Council on Environmental Quality will have the "same close advisory relation to the President that the Council of Economic Advisors does in fiscal and monetary matters." This will assure that environmental quality will be a continuing and over-all consideration in all national policies and programs.

At least once a year there will be a thorough assessment by the Council of the environmental situation. The President will send to Congress annually an Environmental Report, which will cover five topics:

(1) the status and condition of the environment.

(2) current and foreseeable trends in the environment and their effect on social and economic forces of the nation.

(3) adequacy of available natural resources.

(4) a review of the programs and activities of the Federal Government and state and local governments.

(5) a program for remedying deficiencies in existing programs together with recommendation for legislation.

BLM manages 60 per cent of the Federally-owned land. These lands will receive full attention in the Environmental Report. President Nixon has insisted that the Federal Government show leadership in its own treatment of the environment.

One of the first jobs of the departments and agencies is to review their laws, regulations, policies and procedures for adequacy as to environmental considerations. The purpose is to identify deficiencies or inconsistencies which prohibit full compliance with the Act. President Nixon has asked us to get our recommendations to him by September 1.

On a day to day basis, the Act places a very important requirement on departments and agencies. We must include a detailed statement "in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment."

This report must cover the projected environmental impact, unavoidable adverse impacts on the environment, alternatives to the proposed action, the relationship between local short term uses, and the maintenance or enhancement of the long term productivity, and any irreversible commitment of resources.

We have received the guidelines on the environmental statements which will become a part of our daily working lives. An important element in connection with public lands is the emphasis on cumulative activity.

There are no massive public works on public lands that alter the environment in one big operation--like the chain of dams and reservoirs on the Missouri to the North and East of us. The accumulation of thousands of small actions--boundary fencing, water controlling, wildlife harvesting, seismic exploring--do alter environment over time. The guidelines emphasize these kinds of actions as needing the same kind of analysis for cumulative effect as the more obvious large scale impacts.

So far we have filed two statements. One covers the scheduled oil and gas drainage sale off the coast of Louisiana. The other covers the proposed Alaska road to the oil fields on the state lands on the North Slope of Alaska. The new public attitude toward the environment has no better illustration than the 800 mile Alaska pipeline project which crosses mainly Federal lands.

Humble-Atlantic-Richfield has discovered more than an oil field. They proved a new oil province of great magnitude. Yet its development is going slowly because of environmental concerns. Secretary Hickel has been proceeding with great caution. However, even this did not satisfy everybody. A preliminary injunction has been issued against authorization of a service road for the proposed pipeline.

The Department of the Interior is not the only agency named in court actions. In fact, a sister Department is defendant in a series of suits. This is a new area of law. Whatever the outcome of pending litigation, or legislation now pending on the Hill, we can be sure that the Federal departments and agencies are going to be held accountable and held up to constant public scrutiny on environmental matters.

President Nixon followed up the National Environmental Policy Act with Executive Order 11514. It calls on the Federal Government to provide leadership and re-enforces President Nixon's belief that environmental policy "has to be on a bigger than Federal Government basis."

In line with the President's policy on public participation the order also provides for timely information to the public, public hearings, and the search for views of interested parties.

Actually, the National Environmental Policy Act underpins directions in which the Department of the Interior has been moving. It tells us to do more and do it better.

Going clear back to the Taylor Grazing Act, the Secretary is authorized "to do any and all things necessary to accomplish" its purposes, which were listed as "the regulation of the use and occupancy of public land, its preservation from destruction or unnecessary injury, its orderly use, improvement and development."

The Secretary is further authorized to perform the work necessary "amply to protect and rehabilitate" the public lands.

The Classification and Multiple Use Act, now before Congress for extension, provides for the "harmonious and coordinated management of the public lands without impairment of productivity of the land."

The National Environmental Policy Act puts these public land law provisions into a national system and creates the government machinery for its operation.

In carrying out its responsibilities, the Department will continue to emphasize public participation in all its forms--advisory boards, public hearings, coordination with state and local governments, proposed rulemaking, and "open door" policies.

We are going to need the best advice we can get wherever it arises. There will be no preferred or official form of public participation.

We can expect increasing participation of youths in programs of the Department.

Secretary Hickel described 18-year old voting as "a milestone in creating a government that thinks young . . . and boldly enough to handle the challenges of a changing world."

In the Department of the Interior we have Student Councils on Pollution and the Environment. These Councils are known as "SCOPE." In a recent speech the Secretary promised that we'll hear more about SCOPE in the months ahead.

We are very fortunate to have the Chairman of the Missouri River Basin Student Council on Pollution and the Environment on our program this afternoon.

What I am saying this morning has direct meaning to the NABC as an advisory board. We have a need for a broader kind of advice in public land management. We need environmental advice.

When we get specialized livestock advice, recreation advice, or oil and gas advice, it must deal with the broader issues. Policy decisions will have to have environmental considerations incorporated.

This is a hard challenge for all of us. We are not all ecologists, but we all are going to have to live ecology. The environmental advice, seasoned with experience, has to promote the National Environmental Policy Act.

A broad range of interests must be involved. No one is sure yet how broad this range must be. I am still pondering the last sentence of the Public Land Law Review Commission Report which states that the poet, along with the professor and the environmentalist, is needed on advisory boards.

The role and structure of our advisory boards will be examined in the light of the Commission's comments and recommendations.

I am with you for the entire meeting and tour. I welcome the opportunities this meeting offers--to hear the discussion, to see the areas selected for our tours, to meet with all of you, officially and personally, to renew old acquaintances, and to make new friends. As a result of the responsibilities I have assumed, I have learned a new phrase--the Micronesian one for greeting and farewell: It is fitting to say to you, "Hafa Adai."

DIRECTOR'S REPORT

Report of Boyd L. Rasmussen, Director, Bureau of Land Management, Department of the Interior, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

I greet you here today--old and new members and guests.

We are all here as citizens of our Nation to look at national issues from a national perspective--for this is a national board to advise the Secretary.

First, I want to talk about the recent past--then turn to tomorrow.

The world is now facing up to its environmental crisis. People have begun to realize that we have not respected nature's fundamental requirements. As population grows and consumption of resources climbs, wastes pile up and ecological imbalances multiply.

Today's farmer produces enough food and fiber to serve the needs of 44 people. In 1920 he produced enough to serve only 6 people. This is a seven-fold increase. We are just beginning to realize that we may have paid a very heavy price for this productivity. And, in addition, in 40 years our population will double, increasing our total needs for food and fiber. By the year 2000 we will have to construct as many houses and buildings as today exist in the United States. Water and energy requirements will triple. So the strain and drain on our resources will continue to rise at the same time that we are having to take a critical look at the practices we adopted to increase production and utilization.

America's public lands thus grow in significance, as does America's public resource management.

We started our classification program in neighboring Montana. The first multiple use classification was published in 1966 and involved lands in Valley County.

Under the C&MU Act, we have classified 160 million acres all told. Of these, 156 million acres have been classified for multiple use. In the orders, we have given the widest range to multiple use. For example, most lands are open to mining exploration and location along with other uses. We have sought to provide the optimum opportunity for true multiple use resource management and for selective disposal. We have classified 4 million acres for potential disposal.

All classifications are subject to change in order to respond to changed conditions and to newly defined needs. These classifications are the starting point for more effective land use plans and projects.

Simultaneously, with the final phases of the initial classification effort under the C&MU Act, we completed and installed our system for multiple use land use planning. The first year of installation has largely involved training and the cautious start of planning operations in each district. The first year's experience has been satisfying. We believe that we will meet our goals for first generation plans on schedule. We have also used the techniques of the system on special problem areas with excellent results.

Concurrent with the installation of the planning system came the explosive burst of public interest in the quality of our environment. We promptly went back to the drawing board to see whether our system would adequately reflect environmental considerations. The system tested satisfactorily. We are making needed guidelines and procedural changes to cover all environmental matters.

Since we are working in concert with the Department on procedures for compliance with the National Environmental Policy Act of 1969, we have the opportunity to double check our system for adequacy.

During this period of development and change, we have been carrying on our regular business, subject to the new considerations. In 1969, we issued patents to 820,000 acres under a variety of public land laws--exchanges, state selections, sales, mineral claims, homesteads, etc. Revocation of old, obsolete withdrawals continues as a major activity.

Last year, timber was harvested under lease or contract on about 340,000 acres. Only 20,000 acres were clear-cut. On over 250,000 acres the cutting was not only partial but extremely light. We had 158,000 acres under grazing leases, licenses, and permits. There were 1¼ million acres under mineral leases and permits for coal, phosphates, sodium, and other minerals, plus 63,000,000 acres in oil and gas leases. An additional 4.3 million acres offshore were primarily in oil and gas leases, plus 15 sulphur and 2 salt leases.

We completed over 1,100 transactions for clay, gravel, sand, stone, and common borrow and road base materials.

This vast, extensive, complex sale, grant, and lease program covers a great variety of land uses. We are doing business with many thousands of people.

Most of this work is done here in the field, under general guidance of the law, regulations, and the Director's office.

In addition, there is the growing and extensive use of the public lands for recreation. Last year, 65,000,000 recreation visits were made to the public lands. We have 10,000 acres in 190 developed recreation sites, containing 3,300 family units or facilities. Obviously, the 11.6 million camping and picnicking visits were not all on these limited facilities. The 19,000,000 who hunted and fished, ranged across a vast acreage. The newer forms of motorized recreation grow by leaps and bounds, causing great concern to all users.

Your public lands are active acres. We hear a lot about conflicts between uses. They exist. But when we stop and think of the millions who use these lands, we ought to reflect upon the peaceful and constructive cooperation given by the vast majority.

President Nixon urged in his Junior Chamber of Commerce speech that we accentuate the positive accomplishments of our Nation. That led me to reflect on the total extent of the actual use of the public lands and the tremendous amount of cooperation and good will exhibited on a daily basis by the majority of users.

Of course, we face some difficult challenges. In Northern Alaska the State selected a cold, seemingly forbidding area at Prudhoe Bay. Oil was found there in prodigious amounts. The problem is how to get it to the manufacturers. You know of the proposal to construct an 800-mile pipeline, mainly across public lands. The ecological problems in connection with this proposal have brought us a new role in environmental management in a land mass vastly different from the Western range, forest and desert.

Our budget for 1971 contains $750,000 for environmental planning and work inspection in connection with roads and the proposed pipeline. We do not know yet whether the pipeline will be given the go-ahead. But it is essential that whatever is done in the far North conform to the best in environmental practices that can be developed.

The offshore catastrophes at Santa Barbara and in the Gulf of Mexico produced a total review of oil leasing policy and procedures. This has brought us responsibilities with greatly enlarged dimensions. BLM has members on the task force that is exploring all meaningful aspects for an oil shale development program. We are progressing with the process of evaluation of mining claims in the area and clearing the lands of invalid claims.

Budgets are still distressingly tight. Such increases as we get are small. Problems and needs are being recognized, however, which is promising for the future. For example, we received permission to draw on our firefighting account to begin to build up our presuppression readiness in Alaska. The results of this initial amount, although small, are paying off handsomely in more efficient fire control despite a horrendous fire situation.

On May 7, Secretary Hickel announced a proposal to revise forest management procedures in Western Oregon with environmental safeguards and intensive forestry practices. This is receiving wide local discussion and the views obtained will be considered in reaching a decision. This proposal reflects the President's determination to meet the environmental challenge of our times as we meet resource needs as best we can.

Secretary Hickel has said, "There is no way to draw the line between the environment of man, and man as a part of that environment."

He enunciated a five-point environmental bill of rights as a guide to all of us. The American people have:

--The right to expect our Nation's natural resources to be developed for the best uses of the people as a whole;

--The right to expect government to regulate the use of resources to avoid their irreparable destruction;

--The right to expect government to protect population centers, large and small, from all forms of deterioration that threaten the general welfare;

--The right to safe water and the right to assume that the foods we eat are free of poisons;

--The right to breathe air untainted by man-made pollutants.

This is an important decade in our destiny. We will soon become 200 years old as a Nation. In 1776, we defined the rights of man in terms of his spirit. Now we are engaged in defining the rights of man in terms of his environment.

ALLOTMENT MANAGEMENT PLANNING

Report of Leonard Horn, Council member from Colorado, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Thanks, Gene. I'm as near ready as I'll ever be.

I tried to put together a few notes last night. I didn't know just how we were going to approach this, so there will be no prepared statement, but I'll try to bring you up to date on a film that Eldon's going to show here.

First I'd like to say I'm awfully glad that this Council has gotten on its feet again. We're getting something done; and Harrison, I'm awfully glad to have you take the time out to spend with us, for the whole trip, and we surely do appreciate having you here.

Several of us who have worked with Harrison Loesch at Washington to quite an extent since he's been in there, and all of us have found out that he's going to be one of the most cooperative, most knowledgeable persons with which we've ever come in contact. I'm sure we appreciate having someone of his caliber to work with, along with working with Boyd and the rest of the staff. Thanks a lot for your time.

I wanted to go into the background of what brought on these range management plans, and where we've gone. I want to just preface this film with some of these ideas for solving some of the problems the livestock industry had for a number of years, and this also includes Forest Service.

We were getting cuts all over the place (reductions in livestock numbers). Some areas were overgrazed, while other areas had forage, and primarily they would make cuts in numbers because of the "key areas," as they use the term, that were overgrazed, and other parts weren't grazed heavily enough.

They were just breaking some outfits with the terribly large reductions in numbers of livestock, so we in Colorado, we worked with the Forest Service to start with, in coming up with an idea of what we might be able to do to salvage some of these outfits to keep them from going broke, and we started in with range management plans.

The first thing we did, we went to Harvey Valley, California. Gus Hormay was there, and Gus was one of the people we went to work with there on rotational management plans. We then went up to Wyoming. We flew all over the country, anywhere there was research going on, to see what we could do to manage these ranges differently and keep from seeing these reductions in livestock numbers. We started this in Colorado, with a committee of our own Colorado Cattlemen's Association to work with the Forest Service.

Well, I'll back up a step -- we've started this with the Forest and set several of these up, and then when Ed Woozley was Director of the BLM, I went to him at one of our NABC meetings in Washington and told him what we were doing, and in fact some council members thought we couldn't get into this, but Ed Woozley bought it 100 per cent, he liked the idea tremendously. Very shortly after that, he directed that there should be some of these set up, or one of these, at least, set up in every district, every BLM district in the western United States.

Chuck Stoddard, a later Director of BLM, liked the idea and asked that we try to set up two in each district. We've gotten tremendous increases on some of these allotments on BLM districts that we have -- we've gone up 500 per cent carrying capacity on one allotment, and a number of them have gone up 100 per cent. In some places we've maintained numbers where they were faced with large reductions of livestock, so we feel we've done quite a job. The BLM has gone all out on this. George Lea has been in charge of this under Boyd Rasmussen, and they've got a backlog of over 500 ranchers signed up for this program that BLM hasn't got the funding today to actually put up their share, so it's something that's very popular -- it's doing a job.

We have wildlife people working with us. I have a man on my committee from the Game, Fish, and Parks Department there in Colorado, getting back to just one state, but this is being done all over. The Game, Fish, and Parks Department we have there in Colorado, or Game and Fish Departments of other states, are working closely with us on this.

We feel that wildlife benefits greatly. In Arizona, Tom Knagge, Tucson, Arizona's wildlife representative on the NABC at that time, met with us several years ago on one of our National Advisory meetings, and he gave the figure of wildlife doubling in that area from water development done by the ranchers. So it's a program that I think is good for everyone.

Back to the ranchers, I don't think there's anybody that are better conservationists or appreciate the environment more than the ranchers themselves. I believe that it's something we can all work with, this new environmental look, and I just wish that we can keep our feet on the ground. We realize that we have an industry to look after, but I don't think there is any reason we can't be a big help to this new environmental study. I know we want to work that way as much as we possible can.

On these allotment management plans, they're practically all set on rotational grazing. On these, I say that cooperation is number one. We've found out that if you don't have cooperation from your operator, you're lost before you start. But if you've got cooperation, then go into water development, fencing, eradication of undesirable plants, etc. Put all of these things in one package, then go into a rotational grazing system.

We've got a whole new picture of what our range looks like. Erosion control has been tremendous by our greatly increased grass cover. There are a lot of these things that have just changed the whole picture on these ranges, and I don't think there's anyone that's probably gotten more out of this than the wildlife. I think that we've increased wildlife so well on a lot of these ranges that we've got a lot of those people with us that originally felt that we were all just thinking of livestock. It hasn't worked that way; it's been an entirely different answer than what a lot of people felt that we would have in the first place.

I think that this probably covers the bulk of our work. I might give some statistics of what we've got after Eldon shows his picture, but first I'd like to have you see these slides, then if you that aren't familiar with this have any questions, I'll do my best to answer them as far as rotational grazing, what we intend to come up with, what we have accomplished.

Eldon Smith, who was one of our wildlife representatives on the Council, did an outstanding job. We made a tour a year ago last summer with the Montana State Advisory Board, and we covered range from Miles City to Rapid City, we covered Belle Fourche, all of this area, some of this same country we will see tomorrow, and this will give you an insight into some of the work that's been done.

NOTE: At this point, Mr. Horn introduced Mr. Smith, who presented a slide illustrated talk, the text of which appears as Appendix No. 9. Upon the conclusion of Mr. Smith's presentation, Mr. Horn continued his talk, as follows.

Just a statistic or two on how much work has been done, and then I would answer questions because I know there aren't a lot of people familiar with this program. Of course, it's real old to a lot of people we've worked with.

The Bureau has about 160,000,000 acres of field lands that are grazed by domestic livestock, and they figure from these statistics about 125 should have management plans developed. They do have about 800 management plans that have been fully implemented now, and that's on about 22,000,000 acres. In addition, over 190 management plans that they have in the process right now, they don't have. They're prepared, but they're waiting funding implementation, and actually it's been awfully hard pressed to get monies, the Bureau of the Budget seems to look down on us just a little bit for this grazing improvement. Soil and moisture funds are pretty hard to come by.

The ranch interests are generally putting in 50 per cent on the average in these projects, either in labor or in money, but it does take a lot of money.

Lands, of course, don't belong to the ranchers when they're done. If there are improvements on it and the land is taken for anything else, the ranchers have a loss. It's surprising how much private industry money has gone into these, but the ranchers are terribly interested in this, it's been a program that has proved itself, and, as I mentioned earlier, there is a backlog of over 500 requests that people want, and BLM can only process about 200 a year.

So we're really stacked up on something like this, something that would, I think, rehabilitate a lot of these western lands. I think it's a real good approach to the problem, I feel that these range improvements are the best thing we've ever come up with, the range allotment plans. The wildlife people are buying them, the ranchers are buying them, and speaking from an environmental viewpoint I think that this is something that is a must, something that will help the whole western United States if we can get into it. Wildlife benefits are unquestionably helped to a great extent, which is something that millions of people are very interested in, and it's surely helping a lot to stabilize the livestock industry.

And, of course, this goes back to the little towns, the filling station man, the motels, and all the people in these small communities that have to depend on the ranch interests to a big extent for their livelihood. I should also mention that some of these ranchers were just about broke when the Federal land use agencies and the ranchers got together on this new approach to grazing, so I think it's something that's essential to all the western United States, and I'm just hoping we can make a lot more headway with it.

ALLOTMENT MANAGEMENT PLANNING

Remarks of Eldon Smith, former member of the National Advisory Board Council from Montana, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

There is an old truism that if you want a raise in pay, change jobs. I've resigned from this group, and you know this is the first time in eight years that I've been invited to appear on the program.

The series of slides I will show were obtained during visits to four ranches lying between Miles City, Montana, and Belle Fourche, South Dakota. The ranches involved were cooperators with allotment management plans incorporating rest rotation grazing systems. At the time of the State Advisory Board field trip, October 1, 2, and 3, 1968, the various ranches had been participating in a rest rotation system for periods varying from one to four years. In no instance had a complete grazing cycle been completed. Consequently, I will confine my remarks largely to a descriptive presentation in the nature of a travelogue to give you some concept of the country you're going to be getting into on your field trip tomorrow. The opinions I express will be primarily subjective.

In the two year interim since the field trip of 1968, neither I nor other members of the Allotment Management Committee have re-visited the areas illustrated nor received additional quantitative data regarding the effects of the rotation systems instituted on those four ranches. So when I speak in the present tense, I will be referring to the field trip of October 1, 2, and 3, of 1968.

Insofar as this group will be visiting one of these ranches tomorrow -- the Crago brothers -- you probably will be receiving additional specific information concerning one of the four ranches involved, which I will be depicting today. In fact, I know you will, because I saw a very well illustrated folder in the packet that was handed out to us.

Now if you will turn on the projector, please, and turn off the lights. My head's going to be in the way for some of you people, but after looking at the wires on the podium I decided that without the help of the Electrician's Union I would not dare move it.

Participants in the field trip I will depict were the Montana State Advisory Board, BLM personnel, some guests, and Mr. Leonard Horn from Colorado. Leonard is chairman of the National Advisory Board Council Natural Resources Committee that initially requested the establishment of a committee to study various allotment management applications. The trip was by bus.

The first stop was the Gayle Taylor allotment approximately 50 miles north of Miles City.

In the system devised for the Taylor ranch, one pasture was designated for principally winter and spring range. This was done because of the topography, the amount of shrubby type plants in the coulee for protection of the livestock in the winter, proximity to ranch headquarters, and because of access roads.

For the remaining portion of this allotment, a five pasture rotational system was devised. The range resource that Taylor had to work with was basically sound. He had worked out his own three pasture rotational system in 1963 and had good results. He desired more flexibility and some range improvement projects, consequently an allotment management plan was applied in 1965.

This two section pasture we are observing has been given about 450 AUM's of grazing use from June 15 to July 15 of 1968.

Good wildlife cover remains. We observed on this trip -- and this is quite a trick in itself when you have a couple of rumbling Greyhound buses and 60 noisy people -- sharp-tailed grouse, white-tailed deer and mule deer on various sections of this allotment.

Another pasture, called Sheep Mountain, contains a significant amount of crested wheat and is grazed in early summer and fall to capitalize on the growth characteristics of the wheat grass. This three section was grazed during those periods -- during the current summer with 1,100 AUM's of grazing use.

Water development was one of the range improvement projects designed under the allotment management plan.

One of the more obvious effects of Taylor's operations is illustrated by the recent healing of headcuts by shrubby plants. Cattle production also was improving on the Taylor ranch at that time.

Between 1953 and 1962, for example, Mr. Taylor had 95 per cent calf crops at about 360 pound weaning weights.

By 1967 his calf crop had increased to 98 per cent, with 400 pound weaning weights.

Obviously this cannot be completely attributed to the allotment management plan, but he was showing some effects, both from his own earlier grazing procedures and the allotment management plan that was subsequently applied.

Between these two periods Mr. Taylor's grazing operation also increased from about 100 head of cattle a year to around 180 head.

The second ranch visited was the Gilmore allotment southeast of Baker, Montana. This allotment has a record of sheep use during the Thirties and Forties (Approximately 2,000 head). A switch to cattle was made in the early Fifties, with about 250 head of cows with calves running on the allotment until 1967. This, incidently, is Section 15 range. Season of use varied but was usually from the middle of July until the first part of November. Continuous, selective use destroyed the vegetation on large areas; other areas received very little use.

A five pasture rotational grazing system was designed in 1966 and went into effect in 1967. At the time of the trip it had been in application for two summers. The area pictured was rested until flowering time in 1967, and grazed all summer in 1968.

Utilization was heavy on this pasture in 1968.

On the plus side, however, is the litter deposit remaining from the light use during the prior summer of 1967.

On the negative side is the low vitality evidenced by desirable grasses in the historically heavy used concentration areas, extending back several decades. This, of course, is one of the objectives of the allotment management plan for this area, to bring back, both in quality and quantity, the desirable grasses for that particular area.

Water distribution has been and still is a problem. Plastic collecting devices are being tried on this particular allotment.

The standard rest rotation system is being applied on this ranch. Pasture four, for example, was rested in 1967 to induce seedling establishment. It was also rested in 1968 until flowering time to encourage strong root growth of seedlings before it was grazed.

Pasture three, on the left, was rested until seed ripe in 1967, then grazed to encourage seed planting. In 1968 it was rested all season to permit seedling establishment. Pasture four, on the right, was rested throughout 1967, and in 1968 until flowering time, and grazed subsequent to that. Pasture four has had heavy continuous use following flowering and into the fall months.

The Crago Brothers allotment north of Belle Fourche, South Dakota, was the third allotment visited and will be the one you will be observing on your field trip tomorrow. Bought by the Crago Brothers in 1962, this 22,000 acre spread has a history of heavy grazing since before the 1930's, first by horses and cattle, and then by sheep. The Cragos have been running cattle only since 1962 (since the date of the purchase). Following extensive fencing a complex six pasture grazing system was devised with the sequence being different for each pasture. It was complex for several reasons, one being that they had another ranch which they wished to use in conjunction with this one. They also used it for both summer and winter grazing of livestock. This plan had been in operation three years by 1968. It will have been in operation five years when you see it tomorrow.

The pasture depicted here was winter grazed in 1966 and 1967, and grazed for three months during the summer of 1967. There were 1,224 AUM's of grazing use on the area, with 45 per cent utilization. In 1968 this pasture was ungrazed until September 1. The aspect we're looking at is western wheat grass.

Indicative of the wide variety of management problems on the Crago ranch, and one of the several reasons for the relatively complex grazing system, are areas of so-called "slicks." These you will be observing as you get into southeastern Montana tomorrow. "Slicks are geologically based soil types whose difficult characteristics include inability to absorb water. Experimental work in such areas include furrowing and seeding green needle grass, western wheat and sweet clover.

One of the more dramatic changes already evident on this ranch, to the wildlifer, is the recovery of aquatic plants bordering some of the stock ponds. These not only affect the wildlife habitat but also result in better water quality for livestock.

Other aquatics, and semi-aquatics, are also represented. Cottonwood and willow have also successfully been planted.

A very obvious visual characteristic of this allotment is the hundreds of acres of bald spots resulting from past selective grazing. One might contend that such spots represent soil characteristics and not grazing effects. I suspect it's a combination of both.

This pasture we're observing was grazed during the summer and early fall of 1966, rested during the summer of 1967, and then winter grazed and used during the entire 1968 grazing season.

Even with this small amount of rest over a three-year period, close observation of the bald spots reveal extension and survival of rhizomatic growth of western wheat into the bald areas.

The inherent potential for recovery is obvious with the proper management.

The potential for improvement is even more apparent in pasture number four where a different grazing sequence was used. Grazed in the fall of 1966, rested for seedling establishment during 1967, and being saved for winter grazing in 1968, the recovery of the bald spots is obvious, particularly when compared to the sheep allotment on the left where rest rotation has not been applied.

This aspect shot of pasture number four provides a more comprehensive view of the healing process.

Some of the most beat up range -- and I use this term rather loosely -- and the slowest recovery on the allotment was evident on low saline benches adjoining stream flood plains. The soil here is heavy and alkaline, showing signs of past and present severe erosion and topsoil loss. In this particular site, I suspect there might have been considerable disturbance by homestead activity.

One of the most evident responses in the short period the system has been applied is the partial recovery and re-generation of the salt bush on the bench sites; residual salt bush is there, and needs the pressure taken off. And, incidently, the improvement of the salt bush is one of the objectives of the allotment management plan for this ranch.

On adjoining bottom lands in the same pasture, site characteristics, soil, and moisture were more favorable and revealed dramatic growth of both the grasses and the salt bush.

Seed production on salt bush was abundant and with proper use seedling establishment should be stimulated.

The fourth and last allotment visited was the Pierce ranch near Alzada, Montana. This area looked a bit rough when we visited it. It had been a relatively dry summer in southeastern Montana. We're dealing with heavy soil and high alkalinity; on this particular ranch there was a combination cattle and sheep outfit. A five pasture rotation was designed to commence in 1968. Insofar as the trip depicted here was in October of 1968, no specific results can be claimed. I will, however, show briefly the area and mention some of the techniques that will be applied. This portion of Montana is desserty, to say the least, subject to hot summers and cold winters and low moisture. On this ranch a drainage named Thompson Creek has provided the most reliable water in the summer and also the most desirable winter shelter for livestock.

But by hanging along the creek during the summer, no forage was left when winter arrived.

Continuous year long grazing and loitering had weakened vegetation, including shrubs, to a point where many species had been eliminated.

Subsequent erosion further affected plant survival and recovery through top soil loss and unavailability of moisture. And, of course, with this picture I think it was Leonard or Gene who suggested that the prairie dog in the hole in the foreground might have created some of the problems in that particular site.

Greasewood, not generally considered as contributing much to the livestock industry in Montana was seasonally utilized in the Thompson Creek and other portions of the ranch to a point where plants were killed or seed production stopped.

Other more protected and less used areas showed vigorous plant growth and seed production on the greasewood.

The selective grazing habits and poor distribution of the livestock had eliminated or reduced major, desirable species of grasses with replacement of less desirable species; a common picture under these circumstances.

The plan, in part, calls for fencing and reservation of the Thompson Creek area for winter forage and shelter.

The remainder of the allotment has been fenced to accommodate a five pasture rotation system with a hub or central corral common to all pastures (obvious in the upper left-hand corner of this picture) in the shape of a wheel. The system emphasized flexibility to accommodate the marginal and variable climatic aberrations of the region and the resultant effects upon the ranch's livestock production and the rancher's income.

The objectives of the plan, of course, being to stabilize and increase livestock production simultaneously with improving the vegetation and soil resource, with water development being one of the early developments applied.

From an agency viewpoint, one of the techniques for measuring trends in vegetative recovery will be permanent photo points using grids and aspect shots.

As a not completely un-biased wildlifer I must admit that the harshness of this allotment appeared to be best adapted, at that point in time, to this horny species of livestock.

Thank you.

LIVESTOCK AS A TOOL OF ENVIRONMENTAL MANAGEMENT

Remarks of A. L. Hormay, Range Conservationist, Bureau of Land Management, Department of the Interior, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

You may not be aware of it, but in the western United States proper livestock grazing management is man's most important wildland management tool. Wildland lands in this region total about 855 million acres. A large portion of this acreage, about 728 million acres, is grazed by domestic livestock.

These lands yield many products and values that are important to the people of the country. Some of these are: meat, hides and wool from livestock grazing, timber, water, wildlife, recreation, esthetics, and open space. The nation could hardly survive without these resources.

It should be appreciated that all these resources stem directly or indirectly from vegetation. Vegetation is the basis for livestock and wildlife production. The yield of clear, usable water from the watershed is determined by the amount and kinds of plants on the land. Soil erosion and soil fertility are controlled mainly by vegetation. Many esthetic values stem directly from vegetation. Most recreational pursuits such as hunting, fishing, hiking, camping, and photography relate to vegetation. The amount and quality of these resources are determined by the kind and density of plants on the land. Therefore, good land management consists essentially of good vegetation management.

In the last 100 years, since settlement days, great changes have occurred in the vegetation on wildlands in the western United States. Many of these changes resulted from improper management of livestock grazing. Large numbers of animals were grazed season-long or yearlong continuously year after year. As a consequence desirable plants were killed and reduced in amount and undesirable plants have increased. The overall vegetation cover on the land has been thinned and much top soil has been washed away reducing soil fertility. Most of the damage occurred by 1900 before the government and private land owners gave much thought to land management. Emphasis was placed on opening up and developing the West. Unfortunately, these wildlands are continuing to deteriorate because of improper livestock grazing and for other reasons.

Rehabilitation of these lands is dependent on changing the vegetation to a better kind and making the vegetation cover thicker. How can this be done? Man has but a few tools with which to objectively change or manipulate vegetation -- these are livestock grazing, logging, artificial revegetation, and chemical and mechanical measures. The latter includes such practices as plowing, discing, chaining and bulldozing. The most important and powerful of these tools is livestock grazing. It can be applied on most of the wildland area in the West.

Improper livestock grazing can be highly destructive to the wildland environment. Proper livestock grazing management on the other hand is man's most useful tool for manipulating wildland vegetation and for increasing and enhancing the yield and quality of wildland values.

The Bureau of Land Management is responsible for management of about 174 million acres of the wildland area in the West. Management objectives on these lands have been spelled out in Public Law 88-607 -- the so-called Classification and Multiple Use Act of 1964. This Act states in essence that lands retained in Federal ownership shall be managed for domestic livestock grazing, wildlife (this means all forms of wildlife from insects to big game animals, because they all play a role in the scheme of things in the wildland environment), outdoor recreation, timber, water production, watershed protection, wilderness preservation, and other public values. Further, the Act calls for high-level, sustained production of the various resources so as to best meet the present and future needs of the American people. It calls for quality production and not necessarily the greatest dollar return or greatest unit output. This is an almost overwhelming responsibility. The Bureau looks to this board for advice and counsel for best management of these lands.

Meeting these objectives is not such a difficult task when it is appreciated that all the resource values stem from vegetation. The objectives can be realized through proper management of vegetation. And proper management of vegetation can in the main be realized through proper management of livestock grazing.

The range manager, therefore, plays a major role in wildland management and assumes great responsibility for increasing and maintaining the productivity of the land. Private rangeland managers no less than public rangeland managers assume this responsibility.

It is commonly thought that ranges deteriorate primarily because of grazing by too many animals, and that they can be improved by grazing with the proper number of animals. This is not true. The basic cause is not too many animals, but continuous grazing.

The plant makes its food in its leaves. If the leaves are grazed off closely and continuously for a period of years, the plant dies for lack of food. Close use of preferred forage plants is unavoidable because of the grazing habits of livestock. Livestock prefer some plant species and the vegetation on some areas to others and invariably graze them closely. The pattern of use is much the same from year to year so desirable forage plants are killed out and inferior ones take their place. In view of this it is clear that plants must be rested from use at times so they can make food.

Resting the range from use at proper times is the foundation of a sound grazing system, and is in fact the basis of rest-rotation grazing management. This type of grazing is now being applied with good results on many ranges throughout the West -- on yearlong and seasonal ranges, on gentle and rugged terrain, and in arid as well as moist areas. It can be applied anywhere.

In this system rest is incorporated in the grazing cycle to allow plants time to make and store food, ripen seed and for reproduction to establish. The amount of rest needed for these purposes is determined by the kinds of plants on the range. Thus, a rest-rotation grazing system is designed for the particular range.

To practice rest-rotation grazing management the range must be divided into pastures or units. The number of pastures may be two or more. One or more pastures are rested and the others grazed each year.

The basic grazing and resting treatments that apply to a pasture over time are:

1st year	Graze (seasonlong or yearlong)	
2nd year	Rest	To allow plants to make and store food and recover vigor.
3rd year	Rest	To allow seeds to ripen. Graze thereafter to trample seed into the ground.
4th year or longer	Rest	To allow reproduction to establish.

Such a sequence of resting and grazing treatments constitutes a grazing cycle. The cycle of treatments is repeated until objectives are realized. The treatments may then be altered to meet new objectives as they come to view.

Rest-rotation grazing management was first applied on a practical scale on the Harvey Valley cattle allotment on the Lassen National Forest in northeastern California. The allotment is about 21,000 acres in size, and is grazed with 500 cattle for a 4-month summer season. The main vegetation types are meadow, dry grassland, sagebrush, and conifer, mainly pine. The allotment was grazed by large numbers of cattle and sheep in the past and is heavily deteriorated. The rest-rotation program was started in 1952.

Desirable forage plants such as tufted hairgrass and Nevada bluegrass, which were reduced to a low amount in meadow types by past grazing, have increased significantly to date. The vegetation cover on many of the heavily deteriorated sagebrush sites has thickened. The plant composition consists mainly of sagebrush, rabbitbrush, buckwheat, needlegrass, squirreltail, about the only kinds of plants the soil can now support. However, these plants, though not the most desirable, have value for livestock and wildlife and most important for controlling soil erosion.

Under this program a dense stand of cheatgrass -- a rather undesirable annual plant -- on an old sheep bedground covering several acres has been replaced entirely by better perennial plants.

Desirable forage and cover plants are re-establishing on livestock concentration areas -- on preferred meadow types, openings created by logging in the timber stand and around watering places. Vegetation is establishing even on the banks of earthen stock-water tanks. These tanks now provide ideal habitat for waterfowl, and food, cover and water for many other kinds of wildlife. Aspen sprouts now are growing to good size and furnish appreciable forage for both cattle and big game. Bitterbrush, a valuable browse, is being kept in a highly productive condition.

Soil erosion is being controlled over the entire range because of increased vegetation. Gullies in some meadows have been entirely revegetated. Erosion control on watersheds and ranges throughout the West depends mainly on establishing an adequate cover of vegetation on the land.

A question often asked by foresters is: Can rest-rotation grazing be practiced on forest lands without interfering with the growth of the trees? This question is answered in part by results on the Harvey Valley allotment. Here pine trees established from seed grew to a height of 8 to 10 feet in 12 years, unaffected by livestock grazing. Nearby, outside Harvey Valley, under continuous grazing trees established in the same way were only 1 or 2 feet tall in 12 years. All these trees were grazed, rubbed and trampled and looked more like bushes than trees.

Proper livestock grazing works in several ways to restore and maintain the productivity of wildlands. Livestock "plant" seed by trampling. Seeds of all kinds of plants -- grasses, forbs, shrubs, and trees -- are planted so all multiple-use purposes are served. Livestock are the only means by which this planting can be done over the entire 728 million acres of range land in the West. In the forest, livestock can be used to remove plant competition around young trees and increase tree survival. Of great importance, livestock can be used to reduce fire hazard -- to remove the flash fuel on the range and forest floor minimizing the occurrence of fires of conflagration proportions. Accumulated old growth on ungrazed plants has a stifling effect. This growth can be removed by livestock in many cases resulting in greater and more thrifty herbage production.

Livestock grazing, properly timed, stimulates the growth of many plants. A case in point is bitterbrush. Under grazing with cattle this plant is hedged into a form which makes overuse by any kind of grazing animal virtually impossible. Such plants are highly vigorous and when rested from use produce considerably more herbage than ungrazed plants. Furthermore, the growth is all within reach of the grazing animal. Several other important browse plants can be shaped in this manner.

Cattle are now being used as a tool specifically to generate more food for big game animals. Near Bishop, California for example, cattle are being used to produce more bitterbrush for deer on a critical winter range. For many years this range was grazed only by deer and only in winter. Under this use bitterbrush plants were weakened and killed. Little reproduction has established in recent years. The food supply for deer has been declining. A rest-rotation grazing program with cattle was started on a portion of this range in 1966. The bitterbrush plants on the area are being hedged into good form and already more usable feed has been produced for deer.

Just this year the Idaho Fish and Game Department, Bureau of Land Management, Forest Service, Idaho Department of Land, and stockmen in cooperation set up a rest-rotation grazing program with cattle on a large range area back of the town of Boise, Idaho. This area is a critical deer winter range and an important watershed. Fires in the past denuded large portions of the area causing severe floods in Boise and the surrounding country. Two important needs on this area are more feed for deer and reduction of fire hazard.

Most of the livestock on the area were removed in the recent past with the view of leaving more feed for deer. After attending one of my grazing management training sessions in 1968, representatives of the various groups agreed that cattle should be put back on the area under a rest-rotation grazing system. This year, cattle were back on the range. It is too early to report grazing results. But an important thing has been accomplished to date. The participants in this project have reached a common understanding of problems and objectives and the means by which these can be resolved. They are discussing and communicating as never before. They have a common goal -- producing a maximum amount of desirable vegetation on the land.

Proper livestock grazing management is indeed man's most important tool for maintaining the productivity and quality of the wildland environment.

BLM'S HERBICIDE, PESTICIDE AND WATERSHED PROGRAMS

Remarks of Eugene V. Zumwalt, Assistant Director for Resources, Bureau of Land Management, Department of the Interior, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

It is a pleasure to have the opportunity to bring you up-to-date on the Bureau of Land Management's herbicide and pesticide program and to briefly discuss some concepts being implemented in watershed management.

Resource management programs are being driven by the conditions of our times resulting in high public interest and concern for improvement of the quality of the environment, and increased uses which tend to cause degradation. This is going to force improved and accelerated conservation, protection, and management of the public lands.

Pesticides - As part of the increasing public concern for safeguarding the environment, chemical agents widely used in the past quarter of a century have come under close scrutiny. We share that concern in public land management. Today I would like to outline what BLM is doing under various Department and government-wide directives. For simplicity, I will use the term "pesticides" as encompassing herbicides, insecticides, fungicides, and rodenticides.

The National Environmental Policy Act of 1969, together with Executive Order 11514 - Protection of Environmental Quality, provide statutory and national guidance for programs and activities that affect the environment. Also included in the Act is a requirement for the establishment of the Environmental Quality Council which, among other responsibilities, provides "Cabinet-Level" guidance for all pesticide programs. A Cabinet Subcommittee on Pesticides for the Environmental Quality Council provides the review and guidance of Departmental programs including the work previously accomplished by FCPC (Federal Committee on Pest Control) established by the preceding administration.

As part of the increased emphasis on the environment, the Department of the Interior issued a statement of policy together with implementing instructions on June 12, 1970 which reflects the guidance provided by the Environmental Quality Council concerning the use of pesticides. The Department has a Working Committee composed of representatives from all of the Interior agencies which assists in developing Departmental procedures. These guidelines assure uniformity and adequacy of the Bureau programs in meeting environmental quality standards, as they concern pesticides.

Since you may be interested in some of the details provided by the Department's policy statement, I am distributing copies for all attendees. Of special note is a list of chemicals prohibited for use and another list of restricted chemicals.

The policy statement provides:

The Department of the Interior has the responsibility of assuring maximum protection to the environment.

The Department will use all its means to reduce pollution resulting from pesticide use.

The Department will consider safety and environmental quality as the primary factors in making the decision on whether or not to use a pesticide.

In areas and programs under its jurisdiction, the Department will:

1. Conform with all provisions of Federal and State pesticide law.
2. Refrain from using chemicals named on the Department's "Prohibited" List.
3. Use chemicals on the Department's "Restricted" List only when:
    a. non-chemical techniques have been considered and found inadequate, and
    b. use can be limited to small scale applications.
4. Assure that use of any chemical pesticide is aimed at a specific pest problem and involves minimum strength and frequency of application.

The "Prohibited" List includes the substances for which there is a scientific basis for belief that use will result in unnecessary, avoidable, or excessive hazards to man or the natural environment. All of the persistent hydrocarbon insecticides (DDT, etc.) are prohibited as well as 2,4,5-T and the arsenical and mercurial compounds.

The "Restricted" List includes chemicals which are likely to present hazards in the environment unless use is limited to small scale applications accompanied by prudent care in their application. Proposed use of such chemicals requires review by the Cabinet Subcommittee on Pesticides.

Our current program avoids the use of all of the prohibited and restricted chemicals on rangelands. In our forestry program, we will be requesting authorization for use of inorganic arsenical compounds on a very limited basis (restricted list) for hand injection to control undesirable trees.

The substantial elimination of use of the "hazardous" compounds by the Bureau has not had an appreciable adverse effect in accomplishing control objectives. In most cases, alternative chemicals which are "non-hazardous" are available for use and will provide for control which is almost equally effective for an approximately equal cost. A primary adjustment in our program was discontinuance of the use of 2,4,5-T in brush control; 2,4-D and Silvex are used as substitutes with almost equal effect on control of the target species.

Another significant 1970 program decision involved discontinuance of 1080 for rodent control in Bureau financed programs. Substitute chemicals, such as gophicide, are being used with good results without presenting a secondary hazard to other animals as does 1080. The Division of Wildlife Services in the Bureau of Sport Fisheries and Wildlife does the predator control work on the public lands. BLM identifies areas on the public domain where management objectives require animal control. The guiding principle in our determination of where and when animal control is to be attempted is the need for animal control to achieve resource management objectives. We are hopeful that a more selective poison can be found for use in lieu of 1080.

At present, BLM requires that all field programs be approved by the Washington Office. The Bureau has the authority to approve proposals involving the non-hazardous chemicals. For BLM, 2,4-D is the principal chemical in this category. Proposals for use of the hazardous (restricted) chemicals are forwarded to the Department for consideration and in turn are forwarded to the Cabinet Subcommittee on Pesticides for review if the Department recommends approval of the proposal.

You may be interested in the special precautions that are being taken in the conduct of our current 1970 (calendar year) chemical programs. These include:

1. Coordinating with the State Game and Fish Departments and other interested agencies, and parties.
2. Confining applications to remote, non-populated areas.
3. Avoiding use near live water.

4. Applying at no more than the effective rate.

5. Exercising great care in confining chemical application to the target area.

6. Eliminating use of persistent pesticides.

7. Dropping 1080 from Bureau financed programs.

8. Finding an acceptable substitute for Endrin.

9. Using 2,4-D or Silvex in place of 2,4,5-T.

10. Deferring grazing use for at least a full growing season after chemical application.

11. Restricting public use during and immediately following application.

12. Informing user groups and other interested organizations of plans in advance.

These added precautions appear to have paid off since we have managed so far to proceed with the program without generating a single complaint from the public.

We estimate that approximately 150,000 acres will be treated with chemicals in the 1970 calendar year. 2,4-D is by far the dominant chemical used. The 1970 program is approximately 40 percent less than the 1969 program; we expect a further decline in 1971 as a result of effort to substitute non-chemical control where practicable.

Watershed Conservation and Development - Activity Planning

During the last couple of years, we have given a great deal of attention to improving watershed analysis and planning. We are trying to assure that the available limited funds are being expended in the higher priority watersheds and will result in progress toward accomplishment of specific needed objectives.

Although we have attempted in the past to program our proposed work on a watershed basis, we were not entirely successful because of failure to properly identify specific objectives. We have renewed emphasis on the watershed approach. For our purpose, we define a watershed as a geographic area which has physical and other characteristics adequately related to make it a logical unit for analysis, planning, programming, budgeting, work accomplishment, evaluation, and maintenance. The watersheds presently being identified average about 110,000 acres each.

We have found it helpful to divide our investment proposals into two general categories - (1) Conservation Objective and (2) Development Objective.

The Conservation Objective is to stabilize the soil to the extent that it is practicable to do so. In our case, most of the improvement of water quality will also be accomplished in meeting the conservation objective. Alternatives for meeting this objective are evaluated on the basis of cost effectiveness analyses. In other words, we are seeking the alternative that will accomplish the objective for the least cost. In general, our conservation objective is designed to place priority on saving the soil which has higher productivity. This means that we won't be treating the "worst first" in many cases.

The Development Objective includes making investments, in addition to that necessary to accomplish the conservation objectives, designed to yield specific needed outputs. This could include such benefits as reduced off-site damage from runoff and sedimentation, increased water yield, increased forage for livestock and wildlife, etc. Alternatives for meeting these objectives are evaluated on the basis of benefit/cost analyses since dollar values can be assigned. Cost effectiveness analyses are used in lieu of benefit/cost analyses when benefits cannot be expressed in meaningful dollar terms.

Determining Watershed Priorities

We are presently in the process of establishing the relative priorities of watersheds for intensive analysis. This will assist in assuring that our limited funds and manpower will be directed primarily to the higher priority situations. An extensive survey is conducted which provides a basis for evaluation of (1) Physical Factors and (2) Non-Physical Factors.

The physical factors are considered by vegetative type and involve determination of the effective root depth supported by the soil, climatic characteristics, and amount of erosion occurring. This provides clues as to the inherent productivity of the soil and the rate it is being eroded away.

The non-physical factors which are considered include the extent of damages from runoff and sedimentation, the need to invest to solve problems of management, etc. Local interest and support, together with active proposals for treating the non-BLM land, are important considerations.

Watershed Analysis and Project Plan

From the listing of watersheds considered to be of higher priority, we proceed to make an intensive analysis. This includes:

1. Determining the present situation by vegetation-soil units as to the productivity of the soil, the extent of erosion, amount of off-site damages, etc.
2. Determining the need for investing to yield various specific outputs such as decreased off-site damage from runoff and sedimentation, increased water yield, etc.
3. Determining the opportunities, or potential, of the watershed to meet or yield the benefits desired.
4. Establishing specific conservation objectives or development objectives.
5. Evaluating the alternatives considered to be practicable for meeting the specific objectives.

We will consider management (grazing, timber, etc.) as a type of treatment for yielding watershed objectives. This alternative will be considered along with other types of treatment for accomplishment within acceptable time periods.

Project Plan

From the listing of alternatives available for reaching the specific watershed objectives, we will make a selection of the best alternatives. We are now exploring the desirability of meshing the proposals for all of our resource management activities to form "Resource Project" proposals. The project plan will be structured so that decisions can be made at all management levels as to the benefits that are considered desirable and the level of investment considered necessary. The acceptance and/or rejection of the proposals as they progress through the programming and budgeting processes will culminate in the allocation of funds and manpower to yield identified benefits.

The planning and design of jobs to accomplish the approved projects is the next step. This is followed by work accomplishment and finally by evaluation and maintenance.

This in brief is a description of how we are now trying to approach watershed conservation and development in the Bureau. We feel that this approach will provide a much better opportunity for decision making at the various levels of consideration through BLM, Department of the Interior, Office of Management and Budget (previously BOB), and finally by Congress. In this way, limited funds can be invested in a manner that will yield the benefits currently considered to be most needed.

Also, we think this approach has some distinct advantages for improved cooperative efforts. First of all, it will give us a chance to sit down with people representing local interests and talk about watershed treatment priorities and the outputs or benefits which should be generated. Hopefully, differences of opinion can be resolved so that strong unified support can be developed.

BLM watershed problems range from those arising in areas of very low rainfall to the high rainfall of the forest lands managed by the Bureau in Western Oregon and California. Recent developments in Alaska, especially in areas of permafrost, are adding still greater dimensions to our program.

The watershed project plans, as well as other activity plans are the end product of the Bureau's multiple use planning system. They are developed under the constraints and guidance of a Management Framework Plan for each planning unit.

The pesticide and watershed procedures I have outlined, among other accomplishments, will assist in meeting our responsibilities under the National Environmental Policy Act.

A primary goal of the Act is to ". . . create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Also, the procedures will aid in accomplishing the required coordination of Federal plans and programs.

As BLM moves forward with the conservation and development of the public lands, we will continue to seek the counsel, recommendations, and support of the advisory boards. Your past assistance is appreciated.

Thank you.

March 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Appendix No. 12

DATE: June 12, 1970

DEPARTMENT OF THE INTERIOR RESPONSIBILITIES
AND
POLICY ON PESTICIDES

The Department of the Interior has the responsibility of assuring maximum protection to the environment.

The Department will use all its means to reduce pollution resulting from pesticide use.

It will be the policy of the Department to consider safety and environmental quality as the primary factors in making the decision on whether or not to use a pesticide.

In areas and programs under its jurisdiction, it will be the policy of the Department to:

1. Conform with all provisions of Federal and State pesticide law.
2. Not to use chemicals named on attached Prohibited List.
3. Use chemicals on attached Restricted List only when:
    a. non-chemical techniques have been considered and found inadequate, and
    b. use can be limited to small scale applications.
4. Use of any chemical pesticide must be aimed at a specific pest problem and involve minimum strength and frequency of application.

/s/ Walter J. Hickel
Secretary of the Interior

Appendix No. 12
(cont.)

POLICY ON PESTICIDES

Restricted List

Aramite

Arsenical compounds (organic)

Azinphosmethyl (Guthion)

Benzene hexachloride

Carbophenothion (Trithion)

Chlordane

Coumaphos

Cyanide compounds

Demeton

Diazinon

Dioxathion

Diquat

Disulfoton (Di-syston)

DN compounds such as dinitrocresol

Dursban

Endosulfan

EPN

Ethion

Kepone

Methyl parathion

Mevinphos (Phosdrin)

Mirex

Nicotine compounds

Paraquat

Parathion

Phorate (Thimet)

Phosphamidon

Picloram

Sodium monofluoracetate (1080)

Temik

TEPP

Zectran

POLICY ON PESTICIDES

Prohibited List

Aldrin

Amitrol

Arsenical Compounds (inorganic)

Azodrin

Bidrin

DDT

DDD (TDE)

2,4,5-T

Dieldrin

Endrin

Heptachlor

Lindane

Mercurial Compounds

Strobane

Thallium Sulfate

Toxaphene

ENVIRONMENTAL PROTECTION: CONTROL OF DESTRUCTIVE RECREATION PRACTICES

Remarks of Howard W. Harris, Chairman, Off Road Vehicle Advisory Council, Bureau of Land Management in California, before the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Thank you, Mr. Chairman, for that fine introduction. I can hardly wait to hear what I'm going to say.

I wouldn't want to deceive you though and put you into the position of the unhappy cow. I think you've heard that story. Somebody gave her a bum steer.

A few years ago, Congress authorized a study of outdoor recreation in this Nation. As a result of that study, the U.S. Commission on Outdoor Recreation predicted a fourfold increase in the demand for the various kinds of outdoor recreation by the year 1980. As you know, that prediction proved an underestimate, particularly since such activities as motorcycle use was not even contemplated.

With shorter hours of work, more time for leisure, more money to spend, and more people under the pressures of modern city rat race, the out of doors becomes more increasingly attractive. A high percentage of that great out of doors -- at least in the Western states -- where people come to play, relax, and recharge their batteries, is under Bureau of Land Management responsibility. Now, when the Bureau was organized, this pressure for outdoor recreation, of course, was not foreseeable. It is no wonder then that a unit of Government not set up to handle such a matter is now having a few problems.

Today, of course, "environment" is the popular word. And, well it might be, for if we are to survive, or at least keep our sanity, we must face up to this issue. However, one of the associated problems is separating the emotional outbursts with level-headed thinking.

In this presentation today, we hope to show you some of our valuable public outdoor resources, how they are being used, some of the problems arising out of that use, and present a few considerations for the solutions to the problems of recreational use.

We have a series of colored slides which illustrate a part of the story, as it has developed in California.

Now, once upon a time, not so many long years ago, an undisturbed shepherd and his flock were typical of public land use.

So was an abundance of game, symbolized here by the Chukar partridge.

And Desert Bighorn Sheep.

There was untouched scenic beauty and plant life, such as the Joshua tree.

The desert lily, and its beautiful surroundings.

The undisturbed sand dunes, with sufficient vegetation to stabilize them in place.

Geologic sites, with fossils from prehistoric times.

Beautiful little hidden valleys.

Rare undisturbed scenes, like the trona pinnacles. These were formed at the bottom of an ancient lake fed by algae. Now exposed after the water has receded, these are probably the world's finest examples of tufa castles.

Then there were vast displays of undisturbed floral growth.

There were many little fragile plants, like this red poppy.

And this natural cactus garden.

This is how it looked before people began carrying the plants away.

And these prickly flowers out in the desert.

And these were undisturbed native palm trees out in the California desert.

This beautiful scene was how it was before modern man came upon the scene.

Prior to so-called civilized man's entry into our story, prehistoric people were making their marks. These giant figures are called Intaglios. The large figure of a man is about 95 feet high, and the animal in the lower left is about 50 feet across. Their historical significance is yet to be fully understood, but there are those doggone vehicle tracks beginning to obliterate them.

Indian Petrographs were at one time undisturbed by vandals, but no more. It seems like fools names and fools faces often appear in public places.

Then, modern man enters the picture -- many times in a recreational vehicle.

There he goes, down the highway, carrying his modern weapons of destruction with him: his motorcycles.

He finds a hill, and looks the situation over.

Aha! More cycles! What fun! So he joins his fellow motorcyclists and off they go to do some perfectly harmless exploring of the desert. There is surely nothing to hurt way out here.

He runs over a few plants like this. But what the heck is another plant way, way out here far from civilization?

But with continued use, the first hill he saw looks like this.

A bit of erosion starts here and there.

And, as one set of tracks joins another, there went our undisturbed scene.

Another weapon enters the story: the dune buggy. Mostly power and big rear wheels, these are designed to conquer the sand dunes and steep hills. This is where many of the lost Volkswagon engines go.

Here is the challenge to the dune buggy: the vast sand dune area.

There he goes, one little old dune buggy out to have some innocent fun.

Here he is joined by others for a race.

He guesses that one little can way out in the desert won't hurt anything -- would it?

Below him are some other playmates: pickups, motorcycles, dune buggies, jeeps, camp cars, trailers, and so on. Looks like a great day ahead.

There they go, converging for the attack on that hill.

Dune buggies, so they say, are perfectly harmless, they don't disturb the surface, hardly leave a track, won't dig down in the sand. Oh, yeah?

The attack of the hill is on!

Well, there's a target. It says something about our heritage. I wonder what that is.

Here's what happens when sand dunes migrate. The lady of the house was unable to keep the sand away from the door. This can be caused by damage to plants which stabilize the sand.

That first one little can wasn't so bad, was it?

Well, some of our scenic lands are becoming garbage dumps.

Also, it does not pay to leave your car parked unattended overnight out in some of our great out of doors in California.

It looks like an old mining operation. Let's explore it. It is interesting to note that the government is now being sued for $500,000 damages to a girl who fell down in one of these places.

Here they gather, watching the fun. In the process the highway is blocked but, oh, well, trucks probably only come along once in a while, so maybe no one will be killed.

This is how the palm trees look after they have been mutilated with axe and fire.

Wouldn't it be nice to just chisel out one little piece of that nice Indian Petrograph? How would they miss just one little piece?

Some doggone partridge went and made a nest full of eggs right where we had to ride our motorcycle.

Nobody wanted to see a fire out in the Panoche Hills that hot summer day, but somehow those hot exhaust pipes and manifolds seem to set fires once in a while.

Some interesting architecture is appearing on the scene. Some of the building contractors and owners don't have any idea of whose land they are putting these monuments upon. There is too much Bureau of Land Management area being used this way.

Now let's view a few examples of controlling damaging recreational activities.

First, most people really want to know where they are welcome and to abide by the rules. Here is an example of how this can be accomplished. A large map is placed at a prominent point, with the rules printed alongside. Smaller free maps and rules are made available too. We have some copies of current maps and rules on the Panoche Management Area for you.

Boundaries should be marked in some way. Here is one way to do it -- with a graphic pitch.

Here's another example of letting people know where they are welcome and where they are expected to stay.

Here is some information for off road vehicles, and tells them where to go.

This next slide shows that some people just don't seem to be able to understand these complicated signs. Some people apparently don't believe in signs at all, and shoot them up. Does this mean firearms control?

This is an example of an effort to educate people to keep it clean: the Johnny Horizon Program.

It has also been recommended that a uniformed force be developed to enforce the rules and protect the people and the resources.

Another suggestion is artificial campgrounds to better concentrate use, and manage people.

Special purpose camps too are under consideration which provide the needed facilities for particular groups.

Dune buggy facilities are another example of special kinds of facility.

Cycle centers, with surrounding developments, are under consideration too.

Rehabilitation of vegetation is sometimes necessary, and here we have an example of an experimental seed plot.

Fireguards are a necessity in some areas. Here's one alongside of which are orange posts 100 feet apart to mark the boundary of intensive use but, at least in California, orange is one color a lot of motorcycle riders can't see.

This sign says "Stop." When the State Director of the Bureau of Land Management out in California, Russ Penny, saw this sign, he was reminded of the story of the unhappy cannibal, who was getting fed up with the human race.

What you have just seen points out that there are some rare and valuable natural resources located on the real estate under the jurisdiction of the Bureau of Land Management. It shows a sample of the pressures of population, what these people are doing out there, some of the problems they create, and a few attempted solutions.

There are, of course, many other problems, and solutions too, that slides cannot possibly show. There were over 500,000 people out there in the desert in California during one weekend recently. Just think of what that means. They were exposed to the elements, some of them were dying of thirst and heat, no sanitation, sewage running all over the place, no health facilities at all and, of course, the problem is not only falling in mining pits, but sitting on cactus and everything in between.

Then there is the crime problem. Many of these Bureau lands are far away from any law enforcement people, and with the great mobility of the modern motor vehicle, criminals can and do operate without too much control. There is lack of enforcement authority by the Bureau, and it must depend largely upon local authority, which is usually far away and unable to keep up with the criminal. Hundreds of crimes happen on public land.

There is the checkerboard pattern of mixed public and private ownership, which makes the marking of boundaries and fencing of property lines a monumental task. There are thousands of unmarked corners. The trespass problem to private land owners is a big one. Blocking ownerships is a necessary solution.

Among various user groups there are some absolute incompatabilities. Those who seek solitude or a quiet picnic or camp, do not appreciate the noise and dust of hundreds of motorcycles running over them. Game managers hate to see the nesting areas or the fawning places overrun during critical times. The livestock man does not like to see animals chased and the grass ground up by off road vehicles. On the other hand, there are hundreds of thousands of off road vehicles with no place to go and with a great urge to get there. There are well over 1,000,000 motorcycles registered in California. How many unregistered ones, nobody knows. My son has 11 motorcycles, I think one of them is registered. The numbers have increased four times in the last six years, sales are doubling each year, there are hundreds of thousands a year in California. So you can see that this managing people is really a rough one.

Most people agree that the multiple use concept is a good one, but things get complicated in carrying it out among incompatible users, so what's the answer? Well, it probably will require that certain uses will have to be excluded from some areas, and some areas will have to be developed for a single primary use, such as intensive motorcycle hill climbing.

Will Rogers once said, "It's a great world, it's just the people." Agreeing with Will Rogers, we find then that land management is becoming people management. Let's talk about this management of people. What are some of the things we must consider?

Certainly, properly equipped personnel will have to be put out into the field to provide protection to the public and to insure protection and legal use of the public land resources. This means a selective, well trained uniformed enforcement arm of the Bureau. Part of the solution requires Federal Legislation giving the Bureau similar enforcement powers as that of the U.S. Forest Service, where a U.S. Marshal and Federal Courts aid in swift and strict enforcement. For the hard core offenders, this is a must. Legislation to accomplish this has been introduced in Congress. It is Senate Bill 3389, before the Committee on Interior and Insular Affairs. I certainly urge you to write your Congressman on this matter on a need for enforcement by the Bureau of Land Management.

But, with the great masses of people involved, it will take more than a staff and enforcement procedures. Probably the best way to control people is through an informed public who is made aware of our resources, who is told about good practices, who is educated to appreciate what it has, and really wants to preserve it.

It has been suggested, for example, that there is a need for a system of recreational information centers on the highways leading to recreation areas. These centers would be key points where travelers could pick up maps, brochures, information on various recreational areas, campground and weather information, directions, rules and regulations. They might contain museums to give visitors a better understanding of the history and ecological values on public lands. School children might be encouraged to visit these centers to help make a public who understands and appreciates the resources.

Our schools should place emphasis on appreciation of natural resources too in their education of future users of the out of doors.

The Off Road Vehicle Advisory Council was organized at the suggestion of the State Advisory Council of BLM, and Russ Penny organized a rather interesting group for 15 interested people with completely adverse ideas to begin with. On the one hand there was the Sierra Club, and the other side with the Cattleman's Association, we had the Dune Buggies and the American Motorcycle Association, the Desert Protective League, and all kinds of interested people. So it surprised a lot of people when we came up with a unanimous report.

Among its recommendations, the California Off Road Vehicle Advisory Council to the Bureau of Land Management suggested:

That there is a need for an inventory of the land, resources, and all of the various uses of these resources. Such an inventory would serve as a basis for use, preservation, and controlled consumption.

We felt the Bureau should mount an intensive campaign of information and education aimed at gaining an understanding and cooperation of the using public and interested citizens groups. This would be an in-depth program and include material for distribution to news media, citizen groups, schools, and the public in general. It would include wide public distribution and posting of the rules for use of public land, a study of the feasibility of using a free recreation permit as an educational tool, and it would include promotion of individual and group participation in conservation, cleanup, and rehabilitation projects.

By the way, that slide where there was a bunch of recreation trailers with their flags was an organized campaign of recreation vehicle users. They went out and actually did clean up tons and tons of material. They are to be congratulated.

In coping with the off road vehicle problem it was recommended that all public domain lands, on the basis of resources and uses, be classified into three zones or groups:

I. Open use areas, where a code of ethics would apply as the only basic limitation on the kind of use.

II. Restricted areas, where conditions would require some restrictions on off road vehicle use. Examples might be seasonal fire hazards, limitations to certain trails, and so on.

III. Absolute non use areas for off road vehicles. This would be where resource values require that they just don't be allowed. Examples might be game bird nesting areas at certain times, fragile plant areas, historical sites, archeological sites, and so on.

Public review, comment, and re-evaluation are important. Citizen advisory councils at the local level should be established to keep communications open between the Bureau of Land Management and the public. The leadership in California has recognized this, and it has proved of great value. Mr. Russ Penny, State Director of the Bureau, deserves credit for his response to interested citizen groups.

There needs to be some kind of off road vehicle registration program instituted to aid in communication, education, and enforcement. Out in these hills we see these people going by, there is no way of recognizing them. Here recently in California the Bureau thought they had three customers, one had a yellow shirt, one a blue, and one a white one, and they went out to the gate there, and they could find nobody wearing shirts like that. This program of registration is not primarily for revenue purposes, by the way. The whole matter of user fees needs to be examined in light of the educational and communication values involved, as well as revenue.

Feasibility studies should be undertaken to consider the use of volunteer groups in promoting safety, education, and enforcement. This has already proved successful in many local areas.

Certainly, with all of these recommendations which will take money to carry out, necessary funding will have to be made through the regular legislative channels.

Another item that I'm particularly interested in: As the taxes go up, then the cattle business gets less and less profit, as was pointed out. We're finding it necessary to go into everything we can think of. We've had offers on everything from nudist colonies to wild boar hunting, and you can imagine how some of these things would mix.

But we do believe that private property will have to be used to take some of the pressures off the demand. Owners of private lands plagued with trespassing may, in the future, add recreation to their programs of land management. In some areas this is more profitable than the livestock industry, and can be a compatible multiple use, but to accomplish and encourage this, legislation of various kinds might be necessary. We're thinking of the fields of taxation and liability laws, in particular.

In concluding, it seems that all outdoors isn't big enough anymore, that we who are privileged to use the public lands today must realize that certain limitations must be placed upon ourselves so that those who follow will have an equal opportunity for use. And by "use" is is not necessarily meant consumptive use. It is agreed that scenic values, outstanding communities of plant and animal life, solitude, historical spots, fragile watersheds, archeological areas, general landscape values, and our whole environmental quality, including aesthetic values, need preserving.

Thank you.

ENVIRONMENTAL PROTECTION: MANAGING DESTRUCTIVE MINING PRACTICES

Remarks of Arnold J. Silverman, Professor of Geology, University of Montana, before the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Mr. Secretary, Director Rasmussen, Members of the Advisory Board, Ladies and Gentlemen.

I am particularly happy to be here today, and your program noted that I was from the University of Minnesota -- not true. I am still a resident of Montana, and a member of the faculty at the University of Montana, and I should like to stay in Montana a while longer.

Next week Mr. Chet Huntley is coming back, and perhaps the President may see fit to nominate him as a national shrine.

I have been interested in the problem of environmental considerations related to mining for the past four years. In 1966 I was appointed to the Coal Resources Research Board of the State of Montana. In particular our work has been directed at problems related to the development of the Montana coal mining industry -- strip mining mainly -- and how to achieve the economic development of Montana's very vast and very rich coal deposits, and also to protect the environment from the kind of degradation seen in other strip mine coal regions in the United States.

One has to only look at a geologic map of Montana to note that a vast part of the eastern third of the state in underlain by rocks that contain huge coal reserves. We estimate that perhaps 350 to 400 billion tons total are lodged in the eastern part of Montana, and if you include parts of western North Dakota, Utah, and Wyoming, we have in the Western states -- in the Northern Rocky states -- perhaps as much as 50 per cent of the total coal reserves for future development for the next few generations. In Montana, containing 14 per cent of the national reserves, we may have as much as 15 to 20 billion tons of stripible coal, at a minimum, and perhaps at a maximum as much as 30 to 40 billion tons of stripible coal.

This large tonnage, particularly with the attractiveness of a very favorable cost/price ratio due to the fact that the overburden of these coals is relatively thin in most places, suggests a very profitable picture indeed for the Montana coal industry.

Let me mention the economic data before I show you a few pictures of the kind of environmental concerns we are talking about and the nature of area that you will see on the last day of our tour.

The best available data indicate that coal can be mined at a cost of about 80¢ per ton, FOB mine, in the Montana fields, excluding taxes, royalties, and rentals. That coal is valued, depending upon its BTU value, at somewhere between $1.50 and $2.00 plus a ton. If you consider that in the eastern Montana coal fields they are mining seams from 20 to 30 feet thick, then we're talking, in terms of a profit, of about 50¢ a ton for every ton of coal mined, and a profit on the order of $20,000 to $30,000 per acre; and when you consider that the coal contracts now in force in Montana apparently will each deliver on the order of a million to a million and a half tons a year, we are talking about a multi-million dollar business in Montana.

Now let's talk about the cost of reclamation -- and I emphasize reclamation and not restoration, because it's impossible to restore the land to precisely what it was before mining began. There is no mined area in the world that is not in some way destructive of the environment.

When we talk about reclamation, bringing the land back to some viable, usable condition, we are talking about costs that are only a fraction of the net profit to be gained by the mining of coal in North and South Dakota, Wyoming, Montana, and Utah. Costs are in the order perhaps of $300 to $500 an acre, perhaps as much as $1,000 to $2,000 an acre with complete leveling, fertilization, irrigation, and multiple plantings. But I remind you that when we talk about profits, we're talking about the order of $20,000 or $30,000 an acre.

How much land might eventually be mined in Montana. If we look at the available bituminous and lignite coal, with a maximum of perhaps 40 billion tons reserves, then we are talking about an order of 150 to 300 square miles, or about a few hundred thousand acres at most. That may not seem like a lot of land in Montana, considering we have 93,000,000 acres within our border, but I assure you it is a lot when you consider the important uses, such as for ranching, for farming, for wildlife habitat, fish and game and water resources development that might be possible with good reclamation practices.

Before I show you some slides of the areas which you will see on the field trip and point out some of the problems in these areas, I want to mention one other factor that's important in the development of these eastern Montana, Wyoming, and North Dakota coals, and that is the very low sulphur content of these deposits.

You are all familiar with the national thrust that has been made in the area of air pollution control and the aim of the national government to reduce the amount of SO_2 and other compounds that are emitted to the atmosphere, particularly from coal-steam-electric generating power plants and also from other industrial processes.

The central United States and the Appalachian region is an area of high sulphur coal, 2 to 3 per cent sulphur. When we're talking about Montana coal, we are considering .5 to .8 per cent sulphur in coal, and we are talking about a premium anti-pollution coal.

The pinch for low sulphur coals for electric power generation is being felt all the way to the Great Lakes area and the central Mississippi region. Montana producers are now shipping to Minnesota and Chicago, and I have no doubt that within the next year they will be shipping coal as far away as the Eastern Great Lakes region for power generation. And how we need that power generation. The best estimates are that the U. S. kilowatt production of electricity will double every 10 years for the next 30 years, which means that for every kilowatt generated today, eight times that much, or eight kilowatts, must be generated by the year 2000.

It seems like almost an impossible task to meet that kind of projection, and yet what we find is that the private power utilities and the electrical appliance manufacturers tell us that we are all second-class citizens unless we each own the 162 electric driven kitchen utensils that every housewife needs in order to prepare pork and beans or hamburgers for dinner.

Eight kilowatt hours for every one being produced today, within the next 30 years. Together with an estimated increase in population of about 50 per cent -- 300,000,000 people by the year 2000 -- we face what I consider to be a very serious problem for environmental protection in the Montana coal fields and elsewhere.

Make no mistake, Montana coal will be utilized. The coal will be mined. The question is, in what shape will the land be left after we finish mining.

May I have the lights off, please.

I think our concern about the environmental crisis was heightened primarily by the Apollo trips. This is a picture of the earth 110,000 miles away from the Apollo 11, and I think that in a nutshell it gives us a view of the environmental crisis we face. There is no other planet to inhabit but earth. This is a closed system; this is the only planet that will sustain life. There is no chance for sustained life on Venus or Mars, and no chance of life on our farthest neighbors in this solar system. So we are earth bound, ladies and gentlemen; this is the place where life will stay and succeed, or the place where it will end.

But further, life occupies a very restricted biological environment on earth. It occupies the lower four miles of the atmosphere, the first 20,000 feet, and the upper four miles of the ocean. So we have essentially eight miles of biosphere, if you will, in which life has developed and succeeded over the past three and a half billion years, and in which man has evolved to the most successful species ever seen in the geologic record. The earth is all we have. To pollute it, to destroy it, is to destroy life itself.

And if you don't believe me, this is a picture of the moon from that same Apollo flight. The other planets are as dead as the moon. There is no other place to go.

Consistently we find in advertising the idea that industry, working through labor and management will produce progress, and that progress will mean prosperity, and that prosperity comes out of a smoke stack. Indeed it does in part, but the thing that's missing is that the cost of that prosperity is what comes out of that smoke stack as well. That goes not only for the manufacturing industry, but for the mining industry.

I might say I have spent 17 years in the mining industry. Most of my former students work in the mining industry. I am not here to point the finger at past practices, I am here to call to your attention what I think are critical problems for the future that are related to the mining industry.

If you will look at the status of disturbed surface lands as of January 1, 1965, what you see is that we have unreclaimed lands in the order of 66 per cent, and reclaimed lands in the order of 34 per cent. If you look at the distribution of how that reclaiming was accomplished, you see that nature accounted for 16 per cent, that industry, through voluntary acts, have contributed about 13 per cent of land reclamation, industry by law, 4 per cent, and Federal, state, and local government another 1 per cent. Although these figures are all outdated, I think you would find if you checked the 1969 figures that they would not have changed very much.

So we have industry, and particularly the mining industry, contributing, voluntarily and by law, the reclamation of about 17 per cent of the lands that have been disturbed by strip mining. The important thing is that we have a large job ahead of us, inasmuch as over 60 per cent of the lands are left unreclaimed by any means. We have a large job from past years for which nobody wants to take responsibility.

When you look at damage by surface mining in terms of fish and wildlife habitat, you see the Appalachian states have suffered the most, 52 per cent, in the exploitation of the resources, particularly the coal resources, over the last 50 years.

In the United States, the coal fields are distributed in the Appalachian Mountains, the central interior, and the Rocky Mountain West. The low rank lignite deposits are in North and South Dakota, Montana, and the soft coals are in Wyoming, Montana, Utah, New Mexico, Colorado, and some parts of northeastern Arizona. These are the coals I believe are going to be exploited for the great energy demands that are coming in the next 30 years.

An example of this kind of exploitation in the use of these coals is the plant in Billings, Montana, which is a coal burning steam generating power plant, rated I think at about 180 kilowatts and which burns about 700,000 to 800,000 tons of coal a year. This is a relatively small plant. But this is the major resource use, energy use, for the coals that will be mined in the Western states.

Here is an example of the spoil banks, the disturbed land in a small part of the Coalstrip area that you'll visit on your trip. Let's begin to look at the kind of mining practices that produce this kind of environmental disturbance, and what we can do about reclaiming these lands so that they once again become habitable, or useful, to man.

Notice that the spoil banks are aligned in parallel ridges. This is the normal way in which they have developed through the stripping operation, which I will show you in some detail.

Again, in the foreground, you see the Rosebud coal seam, and in the background behind it, the overburden, that is, the soil, and beneath it the slightly consolidated rock shale and sands that were stripped away to expose the coal so it could be easily extracted.

Notice that the spoil banks consist of fragments of a variety of sizes, from chunks and blocks and sandstone as big as this room to fine microscopic particles of soil and clay which were part of the active biologic zone which once sat at the surface of the earth.

Another view again of the coal zone below and the spoil banks above. And let me point out here, one of the features that develops in every area, regardless of whether or not it's a climatic environment such as eastern Montana, which has harsh cold winters, warm summers, and low rainfall, and that is that these spoil banks are steep in terms of their relationship to the surrounding topographic environment. That is, they are out of equilibrium. You can see near the top of the picture of the spoil bank that deep gulleys develop, spreading and carrying the rock and soil particles down into the normal drainage systems of the area.

The last cut that is made generally in a strip mining operation of this type results in a final pit, because as the mining proceeds you fill the pit with the overburden from your new cut. The last cut remains, as you can see, filled with ground water as a pond up against the coal seam itself.

Now, in an area like that which looks desolate, which looks barren, which has a harsh climatic environment, which has a rather limited number of species that will take hold, and on top of this which has no biologically active soil zone covering the surface at the present time, reclamation would seem to be an insurmountable task. I think it is not, and I think we must do it.

Here is what it looks like within the pit itself. You can see the coal exposed, about 25 feet of coal here, and above it, above the coal on the right side of the picture, you can see the overburden, in this case varying anywhere from 20 to 40 feet in thickness. The general economic stripping ratio for bituminous coal is 20 feet of overburden to 1 foot of coal, so with 20 feet of coal you could strip overburden in this area at a good cost/price ratio.

Notice that they have one large shovel stripping the overburden, and another large shovel breaking out the coal itself.

Again, another view of the same pit looking back the other way, to show you the way the pit and the spoil banks have developed in this kind of mining.

Now, this is not a scene that is unique to coal mining. I'm sure all of you have perhaps seen phosphate mines, open pit phosphate mines; you've seen bentonite mines, clay mines; there are a number of resources on BLM land, major resources on BLM land, that are amenable to strip mining very much like the strip mining progressing on coal land, and so the problem is not just coal, it's the problem of all mineral resources that can be mined by open pit procedures on BLM land.

Here is a closeup view of the coal itself. It's bituminous rank, it's blocky and it breaks very easily. Very little explosive powder is used in loosening the coal from the exposed wall; you can almost go in and scoop it up with a shovel.

This coal has a value of somewhere between $1.75 and $2.00 a ton, and is the kind of coal which operators can make on the order of 50¢ a ton profit, with a good, highly efficient operation.

The coal is loaded on 100-ton trucks, brought out of the pits to a crusher, and from a crusher to a loading station. This is the loading area where Unit Trains are loaded with coal; the coal trains have 50 to 100 cars and make the run to the site of consumption and back non-stop.

The Unit Train is the low cost transportation system that has made eastern Montana, North Dakota, and Wyoming coal equally amenable to exploitation for the great midwestern market. This Unit Train development cuts the cost of coal transportation, which must be borne by the operator, and has been a boom to the coal mining industry.

This is Kentucky, and the problem here in terms of reclamation is not the problem of the Rocky Mountain fields. The problem in Kentucky stems from the production of sulphuric acid upon weathering, and consequently a high acid soil environment which has killed all vegetation in the area.

We do not have this kind of problem in the Western states. Our coals are generally low in sulphur, and acid mine leaching is a minimum problem, if a problem at all. Our major problem is the stabilization, by vegetation, of the spoil banks, and the investment of a small amount of that profit into returning the land to some valuable and usable form.

Here is what can be done. These pictures are from North Dakota, not Montana, unfortunately, but this was the last pit of a strip coal mine in which man has come in and helped to regenerate the vegetation. You can see a very attractive wildlife habitat in this area due to reclamation.

Here's another area in North Dakota that has been planted and thereby helped along by man; another coal mine pit in which the lake now becomes, not a detriment to wildlife and reclamation, but a major moving force in the reclamation.

Here is an area in Coalstrip which has grown back naturally. This you can have, if you're willing to wait 50 years. This is 50 years of natural regeneration. I think we can do better by using man's brain, his will, and a few of his dollars.

Here is an experimental plot at Coalstrip. This plot is being studied by the Agriculture Experiment Station at Bozeman under the direction of Dick Hodder. He is supported by state money, funds from Western Energies, a subsidiary of Montana Power, and I believe a small amount of money this year from Peabody Coal Company.

This is only after one growing season. He has a few experimental plots hat have been set up to see what can be grown on unfertilized slopes, with no topsoil added.

When you walk around this plot, as you will, I am sure, you will see that -- I haven't been out here for a year and a half, I don't know what's growing here now -- but if you take a careful look at these experimental plots after one growing season, your tendency is to throw up your hands. There is a little bit of yukka, and occasionally a plum tree, that survived the first winter.

Here we begin to see the results of the cheapest type of reclamation. A small amount of preparation work has been done. There is small plum seedling down in the foreground, and some yukka in the midslope that is still making it after one season.

You can see here the use of plastic catch bags in order to try to preserve what moisture does fall on these spoil banks, and try to keep it within the vicinity of these plants. Remember, this is really what would turn out to be a low cost reclamation -- no fertilization, no contouring -- this is only one planting, and we will get a chance to see the results Thursday morning.

Now, the gentleman in the middle background in Tom Gwynn, who is Director of Conservation and Reclamation for the Knife River Coal Company which operates in North Dakota and around Savage, Montana. This coal company has been a leader in reclamation for a number of years, since 1962, as a matter of fact, in our region.

Some of the reclamation results have been disappointing, but primarily because we know so little about how to regenerate spoil banks, but Gwynn has some pilot projects and some large reclamation projects going in North Dakota and Montana, some of them doing well, others not so well.

This is again at Coalstrip, one of the old pits left after the mining 30 years ago, and they're trying to regenerate this as a recreation spot for the town of Coalstrip. The people who live there have made a seimming area, they've stocked it with fish. They haven't got around to planting the slopes yet, but look at the steepness of that slope. It would be very hard to hold that slope, it will be very hard to regenerate vegetation on that slope because this environment is typical of what we call a desert landscape environment. Slopes are rapidly eroded, gullying and intense erosion are typical features, and those of you from the Southwest and California know this type of erosion only too well. Until these slopes are stabilized, erosion will continue to be a serious problem to water conservation and water quality of this area. We will get to the degradation of the surface water environment, along with some other problems that I will talk about in a moment, when I show you one other kind of related activity.

This is Baker, Montana, just to give you an illustration of what happens when wind erosion works on a denuded landscape. It's in an area which does not have much soil or vegetation to anchor the biologically active soil that is there. This is the kind of thing that takes place on the spoil banks themselves. You can imagine that high winds in this country will produce desert sand storms, or dust storms typical of the desert environment, generated from these spoil bank areas until such time as they are anchored by vegetation.

One other kind of mining enterprise that I'd like to point out is sand and gravel dredging, not necessarily gold dredging, although some in the past has occurred on BLM land.

This is the kind of operation which utilizes primarily sand and gravel from stream valleys and stream courses, both ancient and modern.

This kind of mining can be deleterious to streams with strong flooding capabilities, and creates environmental pressures from the place of mining all the way to the mouth of the stream. Those of you who know about, or have read about, or perhaps have lived through some of the California mining experience, dredge mining and hydraulic mining in the Sierras, know what I'm talking about. You realize that most of the catastropic flooding in the Great Valley -- Sacramento Valley area -- was a direct result of the disruption of the normal streams in that area by dredge mining.

These large dredges can continuously remove the sand and gravel from the site, or the sand and gravel can be mined for other valuable mineral matter, and then the residue left at the site in the most unsightly mess you ever saw. Oftentimes dredges are floated on their own ponds. You dam the stream, forming a little pond for the dredge itself, and then the dredge can move upstream by floating from one place to another.

Eventually what you see at the end of this kind of stream disturbance is piles of gravel which have been spread across the stream valley and which have affected the gradient of the stream, which have affected the recharge capability of the sidestream walls, which have affected the contour of the stream bottom profile, which in turn affects flooding characteristics of that stream. A whole host of environmental effects occur, in chain reaction, when a stream is disturbed either through agricultural endeavors, through sand and gravel utilization, through mining for precious minerals such as gold and other heavy minerals that might be economic at a given moment.

The last kind of mining, one which is not prominent on BLM lands, but one I want to point out because it's directly related to open pit mining or strip mining, is the open pit that is produced by the excavation of metallic minerals. This is the Bingham Pit in Utah, looking over the Wasatch Valley. Another example is the Ruth Pit in Ely, Nevada, which many of you, I am sure, have seen, and which produces over 100,000 tons of rock a day. Look at the enormous size of this pit, and in the middle background the large tailings pile.

One thing I'd like to point out in this mining venture is the 99.95 per cent of the rock that is mined here is waste, it has no value.

This is part of the Berkeley pit in Butte, which is growing wider and deeper each year. It is now over a mile wide and 600 feet deep. The oxidized zone is on top, and the secondary enriched copper below.

What can you do in terms of reclamation when you've got a pit a couple thousand feet wide and a mile long? I don't think you can do much with it. It may well turn out to be the largest man-made swimming pool in Montana when you're through, but one cannot talk about filling a pit. As mining goes down, it must proceed outwards, so you can't fill as you mine.

To talk about moving the tailings or the waste rock, which amounts to 99.95 per cent of the rock that's removed from the Berkeley Pit, back into the pit means that you're talking about a cost almost equal to the cost of mining. Although there is good profit in copper today, we're talking about something that is economically out of the picture.

What will we do with an area like this? I don't know. I think this is one of the areas where we must say we're dedicating a small piece of ground to mining a mineral resource that the nation demands, that the nation must have, and we're going to have single land use Berkeley and Bingham pits as long as the nation demands copper in ever increasing amounts.

This is a view of the tailings pile of waste rock at the Ruth pit in Nevada. I wanted to give you an idea of the size of this pile. Some of them are over 200 feet high, they cover acres and acres, and it's generally estimated that when you're engaged in a mining operation of this kind, for every acre of ground which is producing minerals, you may need as much as 10 acres of ground for your mineral processing and waste disposal, and tailings is part of that waste disposal system. So if you have 500 acres producing minerals, you will need 5,000 acres in order to take care of your processing and waste disposals for that mining operation.

I might point out that one of the hazards of this kind of a feature is particle air pollution caused by wind blowing across the tailings. The rock has been crushed very fine in the processing and you find particles being picked up and moved along by the wind.

Another kind of mining environmental problem that some of you have seen, I'm sure, again not as serious on BLM land as on Forest Service land, is the kind of problem that comes from acid mine leaching or acid mine discharge. Primarily, these are from non-working mines, from prospects and old mines that have closed, from new mines that were started and then abandoned; most of these produce acid mine water drainage into the nearby waterways. You see here copper leaching, primarily copper sulphate in the water, which does cause considerable degradation in the water quality.

Again, a wildlife habitat destroyed by acid mine waters. This happens to be in Kentucky, and is the result of drainage from an old coal mine.

Again, something that is now stopped, but this picture was only a year or two old. Mill tailings, the waste rock from the mill, were poured into the south fork of the Coeur D'Alene River in Idaho. This is no longer done.

From my first experience in the West, back in 1954 when I looked at the south fork of the Coeur D'Alene River moving through the towns of Mullan and Kellogg, Idaho, one was just heartbroken at the degradation of a river that was used as an open industrial and domestic sewer. That river is coming back, and will come back, I's sure, but it will take years.

This picture is typical of the eastern Montana we're talking about. This is generally what it looks like when it's undisturbed and in its natural state. And I might point out to you, and I won't read the quote direct, but about two years ago American Heritage magazine published a quote by a vice-president of one of the nationally important coal companies and which was reprinted in one of the Montana dailies last year. I assume the quote is correct.

I'm going to paraphrase it to give you some of the flavor:

> "Those people who ask coal miners to reclaim the land that they have despoiled during strip mining are nothing but a bunch of pinko communists, ignorant men that will have to be knocked down every time they rear their ugly heads."

Now, that's a two-year old quote. I think many people have changed their mind about that kind of attitude, and I think the responsible coal companies have changed their mind with regard to reclamation on Federal and State lands, and I hope private lands as well.

In conclusion, I'd like to point out a couple of things that I think are happening for the good with respect to the protection of the environment from the kind of mining enterprises that should concern the BLM.

The first is that we are beginning to develop leasing arrangements and leasing contracts, and voluntary contracts on state land, particularly in Montana, which I believe make important strides in protecting the environment, protecting not only the subsequent user of the land after the mining is completed but also the miner as well. By offering contracts in which no single company will have a competitive advantage over another, if they have to invest $500 to $1,000 in reclamation after the mining is finished, the burden will be shared by all alike.

We have developed in Montana (Gary Moon, a member of your Council, was instrumental in passing this only a few weeks ago) a revision of the Montana Voluntary Strip Mine Land Reclamation contract applicable to coal miners, which I think has made tremendous strides, and outside of perhaps the West Virginia and Kentucky may well be the best land reclamation contract in effect now.

One coal company is under it in Montana, and we're hoping that the old voluntary contracts will be withdrawn and revised to this new contract.

Let me indicate a couple of points of this contract which I think are significant and which the Advisory Council and the BLM should keep in mind in their leasing operations.

A preliminary reclamation map is submitted and approved before actual mining operations begin, and a detailed reclamation map is submitted within 12 months after mining operations begin. Reports are filed every year. There must be a reasonable and workable provision for establishing the kind of vegetative cover commensurate with the land use proposed, and the proposed land use will be a function of a decision made not only by the coal operator, but by the managing authority in the State of Montana, which is the Bureau of Mines and Geology, plus the Montana Natural Resources Council.

There should be provision to prevent acid leach materials from getting into the ground water and surface water environment.

There should be provision for the practical utilization of soil.

There should be provision for the burial and removal of all metal and other waste.

Provisions should be made as deemed necessary for access roads commensurate with the land use designated.

There should be grading specifications commensurate with the topography sought and land use designated.

And I might point out that I doubt very much that these very steep spoil banks can ever be effectively reclaimed unless there is some contouring, at least contouring which will provide a slope which is at least in equilibrium with the natural environment. Erosion will be enormous, otherwise.

The operator shall also be required to take precautions that fires do not start, et cetera.

The detailed plan will provide a specified and reasonable length of time for reclamation completion and shall be as concurrent with mining operations as feasible.

If reclamation according to the detailed plan has not been completed in the time specified, and the operator does not qualify under Section III(b) for extension, up to five years, the Bureau shall suspend operations and the Bureau shall institute proceedings for breach of contract or for payment of the performance bond, or for both if circumstances dictate.

And there shall be a performance bond commensurate with the estimated cost of reclamation, not to be less than $200 per acre.

I think we have made a tremendous improvement in Montana in what is called a voluntary contract. The only thing voluntary about it is that two parties have voluntarily agreed to sign it, and once it's signed it's no longer voluntary. I think it offers the state a large measure of environmental protection in strip mine areas. I would like to see this kind of contract extended for sand and gravel, for bentonite, for phosphate, and for any other kind of valuable non-renewable resources that are extracted from the state lands of Montana.

I would like to see the BLM -- and they have made a start last February -- try, at least, to come up to the Montana voluntary contract standards so that the state is not put in an unfavorable competitive position when private industry, looking to lease coal lands, must decide between State and Federal lands.

I think BLM can do this, I think they should do this. If what I think may happen does happen, that is, if we find that Montana, Wyoming, and North Dakota go to some kind of a uniform compact for reclamation in the three states so as to eliminate the competitive operation of reclamation contracts and laws, we will get environmental protection that will be of the lowest common denominator that can be agreed upon by the three states. I think that's the way these things happen, "the lowest common denominator to be agreed upon," and not what the majority consider to be effective, fair, and within the economic boundary of environmental controls that will protect the land for future use. I think that if the BLM and the Forest Service and other Federal agencies which have administrative and management control over valuable mineral lands will take a leadership position in environmental considerations, will take a leadership position in the formulation of leasing contracts, that the states would not be put in a bad competitive squeeze and that the states will have something to fall back on, the leadership of the Federal Government, in their leasing contracts.

Thank you very much.

ENVIRONMENTAL PROTECTION AND YOUTH INVOLVEMENT

Remarks of Dwain Winters, Chairman, Student Council on Pollution and the Environment, Missouri River Basin, Department of the Interior, to the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

In preparing this presentation I kept finding as I made notes that I kept interchanging the word "student" with the word "youth." I kept looking back for some sort of inspiration, not too successfully, and it occurred to me that the word "student" and the word "youth" are not synonomous terms. I'm not sure where the borderline is between youth and adult, so I decided I ought to maybe change the name of the paper to: Environmental Protection: Student Involvement. I was feeling real good at this great insight until I realized that this still wasn't what I wanted to talk about, because there are a lot of people involved in the environmental movement who aren't students; they're youth, citizens from all walks of life -- doctors, lawyers, housewives, Ph.D's. So let us begin with the idea of environmental protection and citizen involvement -- which is the outcry that citizens are making -- and it might be well to start with what the concern is, because without understanding the concern and the severity of it, the activities don't mean a lot.

You might put it this way: There is a rampantly growing number of people who believe that unless the current processes of environmental degradations are halted, we soon will be faced with worldwide environmental crisis, a crisis which could destroy hope for a meaningful quality of life, and may even destroy hope for survival.

Now, this is a pretty strong statement. This statement is often labeled as extremism or as emotionalism. But that's only true -- those accusations of extremism or of emotionalism -- if the concern is not justified. If it is in fact true, that we are faced with even a question of survival, then I don't think we can call this an extremist view.

There is no crystal ball involved in trying to come up with a prediction. There is a general reaction people have with anyone who talks about, for instance, the human race becoming extinct. Well, people talked about the end of the world a long time; they have beards that goes to here (Indicating), carry signs, and wear sandals, and they get their inspiration from the stars or something.

This is not the case. The reasons for making this assertion comes from observation of our environment and the processes going on around it. I'm going to try to explain this in two phases. First I want to talk about the possibility of quality life, and let's work with that. There are many subjects I have talked about in relation to this, but I ought to begin by discussing an expediential growth curve.

It's a mathematical term, and I'm going to talk about the rate in which things grow. If we were to plot the growth of something, be it population, be it use of energy, or anything, for instance, we could say this is time -- we would have units of time here; this is whatever we're going to plot; if we plot these growths we find we get a curve that looks something like this (Illustrating on blackboard). It starts out growing very, very slowly; suddenly we see a great increase in growth.

I'm going to keep referring to this expediential growth curve over and over again, because it appears that almost all human activities are now growing at this rate.

This rate of growth would be fine if we lived in an infinite universe, but we don't; we live in a finite sphere -- the earth. At some point there is going to be an impasse. Those of us who are in the environmental movement are suggesting that the impasse is immediate.

Let's look at natural resources as an example. In the 200-year history of the United States it seemed as if our frontiers went on forever. It is just now that we populated each of the coasts, and are moving back in. Alaska is one of our last great frontiers. We have to realize that there were only so many natural resources to start with on the earth. There are really very few of these that are being recreated, and that the demand for these is increasing.

Where is the impasse? Let's look at some resources. Let's take oil. Now, statistics, as I have been able to gather them, indicate that last year or the year before we reached what appears to be the peak point of oil production. There is only so much oil. If we look at the way in which we consume it, we will consume it much, much more rapidly, until the oil begins to fall off, and then the consumption will decrease.

This may be altered some by Alaska; fine, but if the rate at which our demand for oil is going continues, we're running out, we're already short.

Let's take natural gas. Last year, the demand for natural gas exceeded the amount that was being discovered. I'm told by gas companies that they expect rationing of natural gas by 1980. Some of the major gas companies are taking on no new commercial users, no new power companies. So in terms of fuel, oil and gas is quickly being depleted.

This leaves us with coal. I think coal has been well covered. Correct me if I'm wrong, those of you who are familiar with coal, but as I understand it at our current rate of demand for increase of energy we have about 200 years of coal left, assuming that we will be able to go all the way to using lignite.

There is a point of diminishing returns; we're running out of these resources. There are other basic raw materials which we're also running out of -- helium, mercury, cobalt -- the indications are that there is perhaps a 30-year supply left at the rate we're using them.

Let's examine those very closely. Let's take cobalt. Cobalt is essential for the production of permanganate. Can you conceive of our electronic industry without the use of permanganate? Indications are that we have about 30 years supply of cobalt left. If it's not 30 years, if it's 40 years, 50 years, or 60 years, it really doesn't make any difference. The point is there is a fine line now, and we can't argue with that.

We can see that unlimited growth and utilization of resources will reach an impasse with consumption. When this impasse is reached, there goes what we consider quality of life.

We have two choices: We have one of rationing the amount we have and trying to find ways of recovering all of that that we waste -- recycle -- and trying to extend the resources we have over the broadest period of time; or the other solution is, let's hurry up, use all the energy we can, to get the materials while they last.

This is explained in another basic natural resource -- it's already been touched on -- that is energy. Energy demands double every 10 years; they've been doing this for the past seven decades. What does that mean, doubling every 10 years? This is another one of those expediential growth curves again.

Let me try to put it in some terms. Let's extend it over a 200-year period. If all the power that was now being used by the United States could be produced by 300 power plants, 1,000 feet on a side -- and there is a lot more space than that now being taken up by power production -- but let's say, in 20 years, the space those power plants would take up would be greater than the surface area of the United States. I know that won't happen, but I'm trying to take that as an example to show that doubling every 10 years can't be continued. At some point we have to stop.

The indication is the point may be close at hand, unless we find more ecologically acceptable ways of producing power. Also, we're having real difficulty keeping up with the power demand. We cannot produce the power plants or the transmission lines quickly enough, yet we still continue to promote the use of electrical energy.

Where is this increase in electrical energy coming from? It's really not the power used by the electric can opener that's significant. It's the power used to make the electric can opener and all of the other goods and services we have. This is the major increase in power demand. The manufacturing of the things you own represents power and this is where we're continually using more and more power.

One of the ways to reduce power consumption is to reduce per capita consumption. This theme can be repeated over and over again. It looks as if we are at a point in the history of man where there is not going to be power available to produce.

Let's look at population; this is another of those expediential growth curves.

If I use this curve as an example, imagine to the left going out about a mile from where it now is -- this would continue for a mile -- that would represent about 2,000,000 years on the bottom of the graph. Let's assert this is the length of time that man has been on the scene. Anthropologists have placed man's existence back at least 2 million years. It took from 2 million B.C. to the year 1830 to reach 1 billion people.

One hundred years later we had 2 billion people in the world.

Thirty years later we come up with 3 billion.

Fifteen years later we'll have 4 billion.

And by the year 2000 we'll have 8 billion people.

In less than 250 years we have created eight times as many people as it took to create in 2 million years. This is expediential growth of population, and we see no reason why this isn't going to change. It can't continue much above the 8 billion point of present predictions, assuming that we are going to produce double our food output.

We currently have a population of about 3.5 billion people; two-thirds of them go hungry, with 10,000 to 15,000 of them starving to death every day because we're not able to produce and distribute the food they need.

These are people that die directly from starvation. They do not include the people that die of pneumonia because they were so weak from malnutrition.

At the same time we had 10,000 to 15,000 people starving to death, we had about 400,000 people born, so you see the problem keeps compounding itself.

When someone talks about population, it's easy to think they're talking about China, they're talking about Japan, they're talking about India. But we're talking about right here in the United States, because if it's true that we have natural limited resources, then many of these resources are running out, and I think this is an obvious fact. Then increases in population are going to stress this even more. We're able to feed our population now because we have a highly advanced technology, because one farmer can feed 40 people, and the reason he can do that is he has tractors and other machines. He has trains to carry the produce. All of these factors are dependent upon availability of natural resources and energy for power.

So, population problems are very severe here. It's suggested that in order to support a world population at the rate at which you and I consume services, we can only have about 3.8 billion people in the world.

We in the United States compose six per cent of the world's population. We consume over 50 per cent of the raw materials, a major imbalance. In order for us to maintain the level of living we now have, we're having to steal a major amount of our natural resources. This is why we assert that there is a crisis coming, a crisis that threatens the quality of life.

If you don't believe the numbers, I ask you to check them out yourselves. If you feel there is something that's been overlooked here, then bring it up, ask me.

Let me move on to the more gruesome report. We talk about survival, because survival is involved with something we call ecology and the worldwide balance of nature.

Ecology is the study of the relationship of plants and animals -- living things -- to their environment, and this makes it very inclusive.

You have seen this morning an example of an ecosystem, a system of the balance of nature that exists on the prairie. You could see how each plant and animal is dependent on the other.

Bitterbrush was dependent on cattle in order to maintain it. Before, it was dependent on the buffalo. We have replaced buffalo with cattle. But the plants could not exist without the animals, and the animals could not exist without the plants. All members of this system are interdependent. When we remove individuals from the ecosystem, the ecosystem became unstable and resulted in what we would call ecological collapses, ending up with vast areas of nothing but sagebrush.

This is a simple type of ecological collapse. The problem we're faced with is what you see happening here. You may have seen it on your own land; you've seen it in different parts of the United States. This is now happening worldwide. The same thing that is happening locally in terms of ecological crises could happen on a worldwide basis. The processes are the same.

In what way are we affecting worldwide diversity of creatures? This can be summed up in the word "pollution."

We talk about water; now, we've polluted a majority of our flowing water. We've done this with everything from agricultural runoff to industrial waste. You know the story.

The point is that all of those pollutants as they went down the stream wiped out fish, they decreased the ecosystem. But where do all those pollutants end up? They end up in the ocean, and they have no other place to go once they get there. The concentration of pollutants will continue to increase in the ocean as we continue to flush them down our rivers and streams.

As we start tampering with the ecosystem -- the balance of nature in the ocean -- then we're also working with the balance in general, because the marine ecosystem is totally interwoven with the terrestrial ecosystem. Destroy one, and you destroy the other.

I can give you an example, of course, of effects we've already seen. You've heard about the crown of thorns. We can talk about areas where there are vast populations of kelp that have been wiped out because of pollution, because we upset the balance of the animals that fed upon the kelp.

The important thing to remember is that if we lose the marine ecosystem, we lose the terrestrial. And it's important to remember that you're part of an ecosystem, you're a biological system. Everything you eat comes from some living creature. The air you breathe comes from some living creature. We are as much a biological entity as any other biological entity, and so we are dependent upon this balance of nature for our own survival.

Let's talk about air pollution. Most people think of air pollution in terms of cities, in terms of people dying of smog. Indications are that there are about 5,000 people who die each year directly from the aspects of smog. But this isn't what I want to talk about today. I want to talk about air pollution on a worldwide basis. You see, there is no clean air in the United States as of about 1959, according to the standards set by HEW. There's no air they can measure that they consider clean. The last was in Tucson, Arizona.

We find pollution in Antartica. We have an increase in certain consistencies in the world.

Consider carbon dioxide. It was noticed up until the late Fifties that there was a very, very slow warming trend on the over-all earth temperature. According to the report to the President, this has been attributed to an increase in carbon dioxide in the atmosphere, and it works something like this.

Carbon dioxide is transparent to ultraviolet radiation, to the higher wave lengths, but it's not transparent to infrared infiltration heat. When the light energy passes through and strikes the earth, part of the energy is radiated as heat, but this is not allowed to radiate out in the atmosphere because of an increase of carbon dioxide. Any time we burn oil, natural gas, coal, we increase carbon dioxide.

The increase has been very, very slight. It's only about 15 per cent increase in total carbon dioxide, and carbon dioxide comprises about 1 to 3 per cent of out total air, but this is a very delicate situation.

We're not suddenly going to see a heat wave, but fluctuations in the earth's temperature of just a few degrees have very serious effects upon the weather. An increase of about two degrees over a long period of time may be sufficient to even melt the polar ice cap. This may take 4,000 years once that temperature is reached, but it's still conceivable. More importantly, are the effects upon local conditions.

What's happened since 1959? We've seen a decrease in our temperature. Most of the weather -- the heat and energy -- is very close to the surface of the earth.

How much light is being reflected back? The Smithsonian measured in Washington -- and remember Washington is an urban area so it has a higher air pollution -- and there's been a 16 per cent decrease in the amount of light striking the surface of the earth. We see the beginnings of a cooling trend.

You see competing forces, carbon dioxide, particulate matter. We think we'll be able to eliminate particulate matter in a few years, but the carbon dioxide is still going into the air as long as we burn fossil fuel. This is another one of the many processes which is affecting the worldwide balance of nature.

No one of these things may be enough to cause an ecological collapse, but start combining them.

Another example is pesticides. DDT can now be found measurably in every living creature on the earth -- penguins in the Antartica, starfish in the bottom of the ocean -- and we have about 14 ppm in our bodies right now.

Does DDT have any effects upon living creatures? Remember, we use the word "pesticide" and that is somewhat of a misnomer. Most of these pesticides affect all living creatures, and the effects of DDT have been extensively studied since the discovery of it and its worldwide distribution came about. When you spray it on the land it ends up evaporating into the air and being carried by the air currents everywhere.

DDT that we spray in Kansas, or Montana, or Arkansas, ends up contributing to the worldwide DDT concentration.

It was discovered quite quickly that DDT was responsible for the thinning of egg shells in birds of prey. How and why birds of prey? Well, it seems that DDT, which is a hydrocarbon pesticide, has certain properties, one of which is a fat soluble. This allows those properties to be concentrated in living creatures. Most of the DDT that's been absorbed is stored in the body. If we store some in a lake, a very small amount, the plankton will absorb it. One zoaplankton eats thousands and thousands of fioplankton, and maintains this in its body, all of the DDT that was consumed in all these other creatures.

We go up the food chain to the crustacians. The crustacians eat the plankton, which were eaten by little fish, which were in turn eaten by a bigger fish, and finally we have an osprey or bald eagle that swoops down and eats it. So it then ends up that we have a lake that has less than one part per trillion, but we may have concentrations of 15,000 parts per million, over a million times increase in the concentration of the DDT.

This happens in all living creatures. The animals in the food chain will always be found to have high concentrations of DDT, the extent of the concentration depending upon how long the food chain is and how much was available at the bottom of the food chain to the primary producers.

You and I are at the end of the food chain, we have 12 to 14 parts per million in our body because we are top consumers.

DDT is in the grass; it goes to the cattle, then to us. Or we may get it straight from vegetables. If we eat very much fish, the concentration increases. Biological magnification has resulted in the possible threat of extinction of birds of prey. We don't know the effect of DDT in human beings; this is yet to be proven. It has some rather undesirable effects on plants. Yale University found that very minute concentrations of DDT, concentrations of 10 parts per billion, could impair the ability of fioplankton -- microscopic plants -- from producing oxygen, from carrying out photosynthesis.

If this is occurring in the ocean, then we are affecting the very basic link, the basic member of the whole oceanic food chain. The fioplankton produce the food for everything up to the whale. In most cases the concentration of DDT is no closer than 10 parts per billion, but in a few places it is higher.

DDT does get concentrated in oil slicks, both natural and man made, and one of the main final producers are called diatoms. Diatoms, sometimes called brown algae, store their energy not in the form of starch like most plants, but in the form of oil. When they die, this oil floats on the surface and the culture lives underneath these. DDT has been found in concentrations of this oil greater than 10 parts per billion. This is why we feel, for instance, that although DDT saved thousands of people from malaria and it's allowed us to provide food for an already starving world, the effect it has upon the worldwide ecosystem will result in greater loss of life, in greater destruction than would be from its non-use.

What we should do is replace DDT, which is a long lasting pesticide, with pesticides that don't last as long. The new DDT that can be broken down may be an example.

We see the processes which can affect the worldwide ecosystems, which could in fact cause an ecological collapse that could result in what we call the possible extinction of higher life forms.

The question is, if these situations are true, what is it that citizens are trying to do about it, and how is it that we've had things like this occur?

There are many other problems I could have mentioned such as solid waste, recycling. What can be done? First of all, we have to have a goal, and I think the goal is a level of pollution, a level of population, a level of utilization of natural resources that can be continued on a long term basis.

We know we're going to have pollution because that is a necessary part of human activities, but this pollution can be minimized. We know we're going to use natural resources, but let's do it in a manner which can be continued over the longest period of time. And, by all means, we've got to prevent this population increase because we'd sooner have more people than we would ever have energy and natural resources to maintain.

This is the goal, a level at which we can continue human activities with dignity. How do we accomplish that? One of the ways is by looking back at the history of the United States and by seeing that as we evolve our political and social systems, a different system of checks and balances evolves with them.

When we set it up we had in the Legislative, the Executive, and the Judicial branches, balance of power. As new social powers came up we added checks and balances for labor. Minority groups are now trying to develop checks and balances within the system as these problems have presented themselves. But never have we really had a check and balances for the environment.

The reason is somewhat obvious. It's hard for a redwood tree to lobby. We are seeing now though people who are attempting to set up checks and balances. It's already begun in the Federal system.

You've heard how the BLM has to submit reports for environmental review. This is the type of review we need. We need an environmental impact statement to determine what is consistent with long term use. Most of the time we plan for short term as opposed to long term. Our past is a good example. In short term, it would make sense to put as many cattle out on the land and sell them as soon as we could. On a long term basis, we see that if we do this we would no longer have pasture land, so we must regulate the cattle that we put on the grazing land. This is the thing that has been lacking and has gotten us into this mess.

There is a final thing that must be done, this is the change of life styles. We have had certain values in the United States. For instance, the concept of unlimited growth, that we can continue to grow further, and the fact that growth itself is a desirable value. We feel that more means better, bigger means best, and this really isn't necessarily the case. We're going to have to try to find a style of living which is going to be drastically different from the one we have right now which allows us to operate in a way that is compatible with the environment that we live in, as opposed with one that tries to compete with or conquer.

To change this we must have a change in values, and the change of values will come about through an educational process. Right now we're not sure what all these values will be because of the lack of understanding of the environmental problems, lack of understanding of exactly what the future can hold.

The change of values is already occurring. You see, for instance, the values I would have towards life are much different than the ones you have, and yours are different from the ones your folks had. But I find that when I go back to high school and talk about the differences of ideas and attitudes the students have, they are different from the ones that you have and that I have. We see again the expediential growth curve in change of attitude and the willingness to accept change.

The fact that over 50 per cent of the population of the United States is under the age of 25 and that people under the age of 25 are going to be more willing to accept the changes that are necessary indicates that we may be able to initiate a change in life style and a change in values so that we will be living in a way that's compatible. That doesn't leave you out, because you are the Advisory Board, you are the ones right now who help to determine land resource practices.

Although the youth are willing to change the values, you're going to have to help them. The method for changing this is through education, as I said, and it exists on several levels. This is what I was supposed to be talking about.

On the grassroots levels you find that communities all across the United States have environmental groups who try to gather information and distribute it to the people, letting them know what the problems are, continually revising and changing as more information is gathered. This is what the Association for Environmental Improvement is. We have about 350,000 people to educate.

Through this education we will see the changes, for instance, the changes in buying habits that are going to be necessary. We're going to have to have people who will be enlightened enough to vote the political changes that will be necessary. Other changes are governmental changes. One way I can explain it is that when you have Government here and the citizens here, a lot of times the left hand doesn't know what the right hand is doing, and vice versa.

SCOPE is an attempt to make a communications bridge that works both ways. We can get the information to the grassroots organizations and to the people. Government is doing this, they are instigating these programs. At the same time, we must be able to take problems, attitudes, that exist on a grassroots level and make them available directly to officials who are involved in a decision making process.

This goes all the way up to the secretarial level of the different departments, to the Cabinet level.

Another example, of citizen involvement in Government decision making processes is the National Advisory Board Council, in that you are able to carry out many of the very same things SCOPE is trying to do.

The final method of change which is being used by people in the grassroots environment is economic pressure, in an attempt to create a life style that is compatible. It can be long term; you have a competing thing; this is economic interest; even if a company wants to make a change to a packaging material that is more compatible, it may not be able to do it unless its competitor does it also, because the packaging change will cost more money. Through a process of education the consumer is now willing to pay the extra price or is becoming willing to pay the extra price to get the product, to get the services, ecologically acceptable.

Let me close by saying that since I started talking, about 1,000 people starved to death. As we travel on our tour, remember that 200 years ago there were probably little or no signs of man ever walking on this part of the country. See how much we've changed this, how much we have changed the ecosystem, and imagine what that will be like by the year 2000 when we've got half again as many people.

Thank you.

ADVISORY BOARDS AND THE ENVIRONMENT

Remarks of Donald G. Balmer, Chairman, Department of Political Science, Lewis and Clark College, before the National Advisory Board Council, Rapid City, South Dakota, July 27, 1970.

Mr. Chairman, Members of the National Advisory Board Council, Lady, Token Students, Friends.

I know I'm the eighth speaker and I'm not the end. When I think of eight I think of the Eighth Amendment which prohibits cruel and unusual punishment. I think that the BLM is under the Constitution, as well as under various statutes, and we should keep this in mind perhaps.

I prepared a study for the Public Land Law Review Commission on Advisory Boards as part of its inhouse work that related to budgets, administrative structure, and various other aspects of administration of our public lands. Most of their larger studies were done by consulting firms, universities, and outside groups.

Some of the recommendations that the Commission has on the use of advisory boards will be found in the report of the Public Land Law Commission.

The concern of the study for the Public Land Law Review Commission was to figure out where advisory boards fit into the whole picture. The particular title that I have today is, "An Academic View of Advisory Boards." Let me first present an academic view of government.

Political scientists these days view government as a problem-solving system. We are aware of the fact that all people everywhere have some form of government. They have to have some way of settling disputes or solving problems, which if unsolved would destroy that society. So therefore we tend to look at government as a system, and that helps us understand the governing processes in mainland China, in newly developed nations, in Africa, in well established Constitutional democracies of Western Europe and North America.

When we look at government as a problem-solving institution or a system, we find that in America government is most often called in as a kind of a last resort. We deal with most of our problems privately and only when we find we can't settle them privately do we turn to government for final action.

For example, in my neighborhood most of us have been trying to solve our waste disposal problems with septic tanks. Some of us have gotten hepatitis. And my grass grows very green down by the road. As a matter of fact, I think that's what they're doing with the mine tailings in Canada, aren't they, squirting the old sludge on them to make things grow?

But anyway, this is no solution, the problem will not go away, it threatens our very lives. We see the same thing happening in city after city -- for example, private transportation systems unable to provide service, yet transportation service seems essential. Therefore, the people are turning to public ownership and public operation. We could go on, but our point is that where problems cannot be solved privately, they will be solved publicly.

But again, in this country, it's kind of a last resort, ordinarily we prefer private actions. One could point to private ownership of banks, insurance companies, radio and television stations, just dozens of things that in most other countries, including most other democratic countries, are government owned.

We turn to government, because when the government develops a solution it is, of course, one that can be backed up by force. The government claims for itself a monopoly on the legitimate use of force. It's not the only institution that uses force -- there are various groups who do use force, but not legitimately.

The government can put in sewers in my neighborhood and force me to hook up, make me pay the taxes and installation charges. Taxes, of course, are not a donation to the Red Cross or the Boy Scouts. If they are not paid, your property can be taken. If you try to resist, you can be imprisoned.

So we have behind the power of government, ultimately, this concept of force. Now, we say "legitimate use of force," and I think this is very relevant. It sounds fairly academic, but I think it becomes fairly relevant as we consider the previous presentation. People give the government this power to use force legitimately because they recognize the need to have to have some final authority. When government does not use that authority properly, refuses to use it, does not solve our problems, or when it abuses that power, the people will alter that government. Our own Declaration of Independence -- we'll be celebrating the 200th anniversary this decade -- says the people do have the right to abolish or alter the government.

Imperial Russia, under the czars, failed to provide for the needs of the people in World War I: it couldn't fight the war effectively, it had incompetent and corrupt officials, it couldn't supply people with food in the cities; it couldn't provide the farmers with land to work on. That government was destroyed.

We can think of other governments which have failed to provide essential services.

The Fourth Republic of France was put to an end by DeGaulle in a very short order not many years ago.

People do bring about changes when the government does not deal with their problems. I think that there would be very few people in this room who several years ago wouldn't have predicted that President Johnson would be serving a second term. And Harold Wilson in Britain is sitting on the other side of the aisle this week, compared to a month ago.

We're talking about legitimacy. When government doesn't produce, it loses its legitimacy. It seems to me this is one of the essential problems of the environmental thrust of our young people and of our whole society today. Many do not see that the government is producing.

Basically, any government is going to have to expend a great effort on three things:

1. Providing national defense.

   After all, this is the first priority: to preserve the nation. Whatever we disagree on, we all agree that we don't want to be ruled by Chinese or Russians or Germans. Most of you here in the room are too old to learn another language anyway.

2. Maintain internal order with justice.

   The government must do those two things, but thirdly, it also must provide for "support," it must convince most of the people that it is a legitimate way of dealing with important problems. It does this by indoctrinating the young.

Most studies show that children, four, five, six, seven-years old, know who the President is, they think he is a good man, they think he's probably better than their fathers, he's more honest, more capable, greater, and so on.

As kids get up to be 12 or 13, they get a little different idea. They understand that there is a President and there is a Presidency. They have a great respect for the Presidency, but they may have a different political view, along with their parents, of the incumbent in office.

We are seeing increasingly though that there are a number of students who may be questioning the system itself and its claim to the legitimacy, its claim to the exercise of the powerful force of compulsion and coercion, because they don't see the outputs that they have come to expect from government.

And so we have a Presidential commission appointed and headed up by Alexander Heard of Vanderbilt to look into what government is doing and isn't doing that is threatening the future existence of our system. And I think there is very considerable threat to our system.

So this is an academic view of government. Government is a powerful force, it must have the support of the people, and it has to earn that by producing.

Now, where do advisory boards fit into this? One can see them as an instrument of democracy, as a form of communication, another way to participate, to express concerns.

We see advisory boards springing into being during times of crises, such as the great depression or war.

Right now a kind of domestic crisis has resulted in many advisory bodies being created.

We can look at these from two different perspectives, one from the standpoint of the citizen who gives the advice and another from the standpoint of the administrator who might receive the advice.

From the standpoint of the citizen we see this as an adjunct to the elective process which we use extensively in this country. We have over 80,000 units of local government. We elect 500,000 to 800,000 people to public office, nobody knows how many. We have countless ballot measures on taxes, bond issues, and other matters. We probably overuse the ballot as a form of representation. We also find that when we use the ballot, the election process leaves something to be desired in the representation system. We note that when we vote for candidates we are sometimes confused as to why we are voting or what the outcome means. This is because the election process hinges on so many different things that a citizen may feel that he's not made his interests well known, his intentions clear, by just voting for, or more often against, a particular candidate.

Elections also have the very difficult problem of requiring the person to vote where he sleeps. This is very odd. Many of you, I am sure, have been caught in the situation where you have extensive interests in one part of a community, but you must vote where you happen to sleep.

This is most evident in urban areas where many of the very competent people who have important responsibilities in the business community and work downtown live just across an important legal boundary and therefore can't have any direct voice via the election process in governing the central city where their real interests are. Therefore they turn to informal processes to represent their interests.

We have guaranteed under the First Amendment the right to petition Congress. We have created many private interest groups which represent us in Washington, D. C., complimenting our representative institutions with a powerful private power structure.

There was published in Oregon last year a study of the "power structure," the men who really run the State of Oregon. There was not a single elected official -- mayor, governor, or U. S. Senator -- in that list.

Who would the top 20, 30, or 40 be in your state? Not many would be elected officials. We know where the power is!

But, what about the alternatives to the formal elective process or the powerful lobbies?

Advisory committees can be another way to get a message from citizens to their government, supplementing or complimenting the electoral channels and providing a wider variety of interests than the self-organized, self-financed interest groups provide.

There are problems with using advisory boards, including the problem of "functional representation," as this may be called, that is, officially recognizing special interests.

For example, the U. N. is not going to be the site of a settlement of the Middle Eastern crisis. You can't expect in a public meeting, representatives of Israel and the Arab states to make the kind of compromises that are necessary.

So formal advisory boards may have that problem of giving official status to constantly disagreeing forces.

Another problem is that the categories of representation cannot really be kept current. We have already heard here that there are probably more Hondas than horses, and that there are more people with pickup truck-campers than there are loggers. And, people are important, numbers are important. People are much more serious about their leisure than they are about your business, and you know that. And you also know there is no real alternative to "one man - one vote."

Also, of course, there is a danger of "conflict in interest" by members of advisory boards, including, maybe not intentionally, people who get a vested interest in being a public advisor.

Let us look at advisory boards in another way, from the standpoint of the administrator. Here is a way of getting a lot of free expertise. This is to the advantage of the administrator and to the public.

It's a way of getting feedback useful to the field, to the headquarters, and the responsible elected and appointed officials. It helps preserve legitimacy and prevents unintended consequences of governmental policies.

It's a way of building support, of facilitating voluntary compliance which, of course, is what really has to be the cornerstone of any democratic system. We don't want to have coercion everywhere, but only when finally necessary, such as when some people shoot up all of the signs or when BLM can't order criminals out of the public lands.

But short of that, for most regulations we need voluntary compliance, and advisory boards are a way of having an opening of, if not a meeting of, the minds.

There are dangers. Administrators can hide behind them and say, "Well, the Board said this, and therefore don't blame me," and avoid their Constitutional and public responsibilities.

And, of course, the reverse could happen. Advisory boards can capture the administration and assume responsibilities without really taking the political and legal responsibilities of public office. People who have lost at the ballot box might be able to move in this direction to retain power.

There are other perspectives besides those of the citizen and the administrator.

I think the courts may get interested in advisory boards. They are already interested in councils of governments where a city has one vote and the county one vote and the little district one vote, with the result that a little district may have 20 or 30 times the votes of the city. The mayor of Cleveland has brought suit on this ground. We may see something emerging in the Courts about advisory boards.

Congress, of course, is increasingly concerned about its lost powers and the need to reassert itself in both foreign policy and in domestic policy. And since we're talking about advisory boards that advise administrators, and talking about this as an additional form of representation, Congress is going to be quite interested, I suspect, in where they fit in as elected representatives of the people.

Let us look at advisory boards in practice. Our studies show that first of all we know environment is a hot issue. It is illustrated at this meeting by the very excellent presentation that Dwain gave us. I would say that on almost every campus that I know that there are 10 to 500 students who could do not quite as well, but almost, in expressing their concern.

There are many people who read the books he cited. A publisher doesn't publish a paperback unless it's on a popular issue. A tremendous number of people are vitally concerned about environment, at least for the moment.

We all know that environment is an incredibly complex issue that involves governments of all kinds: local planning bodies, state highway commissions, park commissions, state land agencies, international trade agreements, and on and on. We know that this is a policy area vulnerable to political pressures.

For example, the citizens of Oregon rose up against the shipment of nerve gas from Okinawa. It was then decided to send it to Alaska, where the Alaskans rose up and forced the military to dispose of the gas elsewhere.

The voters of the City of Eugene, Oregon, postponed for four years a nuclear plant of 1,000,000 kilowatts which was counted on in the Northwest power pool, now thrown all out of kilter.

Militant students at the University of Oregon drove off recruiters for Weyerhauser as if they were from the Marine Corp or the Navy.

There has been a terrific shift in attitudes toward abortion laws, a very dramatic shift in our concerns, with a resulting change in public policy.

These environmental issues now have a tremendous momentum behind them. The Federal Government and most of you have been concerned with this for decades, of course, and you know the dangers of hasty action in this complex area.

There are thousands of advisory boards in America, and I estimate there are several million people who serve on advisory boards at all levels. Some of the oldest and most firmly established deal with public lands.

In our recent survey, BLM had 55 grazing district boards, 10 State Multiple Use boards, 1 national body, 5 District O&C, and 1 State O&C Land Board.

The National Park Service has, since 1935, 1 National Parks, Historic Sites, Buildings and Monuments Board, 36 local boards, one of which dates back to 1848, and some of which are scheduled to phase out after they've been in existence some 10 years, plus many ad hoc bodies -- dealing with off-road vehicles, as an example.

The Forest Service has had 1 national board, 3 regional, 10 research, 4 road, 62 National Forest Multiple Use Advisory boards, and 78 National Forest Grazing boards.

How many of you are on these National Forest Grazing Boards? Some of you are. You could tell us a great deal about them.

The problems concerning these boards that I summarized in the Public Land Law Report included these:

That there is an uneven application of these boards.

There are unconnected and overlapping structures.

There are rigidities and inflexibilities.

There are uncertain roles assigned to these boards, or, to put it another way, there is overlapping and duplication in some instances.

There are vast parts of the public land that are not the concern of existing advisory boards.

There is no interconnection between all these board systems.

There is no interdepartmental cooperation or coordination.

It's not always intradepartmental cooperation. For example, the National Parks people may be talking about swapping some land, and not tell the O&C people, and the O&C may be discussing something and not tell the National Forest Multiple Use Board. In other words, there's no comprehensive structure.

The membership varies tremendously.

Some are bound by statutes that are many years old.

Some of you have been "elected," and others appointed. (I know that you have all be "appointed," technically.)

Some agencies prefer state employees as wildlife representatives, others prohibit their appointment.

Some agencies prohibit trade association staff people from serving.

The roles that the boards have vary tremendously, some determined by law and administrative order. In some cases, they are the final authority and can only be reversed by a written statement from an administrator. In other cases, the boards disburse funds or hear appeals. There are all kinds of problems with the kind of role that advisory board members are asked to play.

The procedures are also somewhat varied, although theoretically Executive Order 11007 presents some sort of uniformity as a goal.

And, there is still some confusion as to whom advisory boards advise, whether the local board advises the local employee, or does this pass on up to the state or the national level? Is this body here (NABC) advising the BLM or the Secretary? I noticed a little ambiguity in the discussion so far today.

And where does Congress, and where do State Legislatures come in? Do you take stands on pending Congressional bills? Is that one of the functions of this Board? And if so, where is it spelled out?

And, of course, one of the most difficult problems is: What if you're asked to give advice and it's not accepted? It is much like when one deals with his wife. It's not always understood that the advice may be requested, it might be cogent, it might be wise, and still might be rejected.

But there are many positive features, of course. Thousands of people have participated in the giving of their wisdom, their experience, their technical competence. They have made our public policy better.

There can be no doubt that our public policy has been improved by the two-way contract that exists between administrators and citizens who serve on these boards, and to some extent the general public has been further exposed to public policies, although not nearly to the extent to which I think it should be.

Now, let me summarize a couple of things from our survey.

Most of you were surveyed, and we were happy to get responses which have been tabulated and are awaiting further computer analysis.

I know that any questionnaire has all kinds of shortcomings, it's too ambiguous and that sort of thing. However, most of you did reply, and we have responses from 436 board members: 261 BLM members, 164 Forest Service, 6 National Park Service people; and from 159 administrators; 66 BLM and 92 Forest Service.

In general everybody thought boards were fine.

In particular:

Ninety-seven per cent of the members and 89 per cent of the administrators saw them as useful additions to the process of representative government.

Ninety-two per cent of the members were unwilling to call boards window dressing. However, only 69 per cent of administrators were unwilling to call them window dressing.

About 60 per cent of the members felt that they were actually being used in helping to choose alternative public policies, but 75 per cent of the administrators did not.

So there is an odd thing here. Not having these figures in front of you, I realize it's not too easy to follow. But the point is, an overwhelming number of members felt that Boards weren't window dressing, but they weren't quite sure that their advice was being taken, whereas administrators were a little more willing to think of them for "show" but were more convinced that they were having an impact on public policy.

Members were not very anxious to include new categories of people in their ranks. By a vote of 69 per cent to 24 per cent of the vote, members said "no" when asked the question, "Should membership be broadened?"

Administrators were about split, 49 per cent to 47 per cent.

Now, when you're elected to a board, what do you represent, yourself, your occupation, other people in your category, just what?

Members thought they should represent their occupation group, 54 per cent to 30 per cent. Thirteen checked both "occupation group" and "personal judgment."

The members of BLM boards, were convinced they should represent their occupational groups, 78 per cent, against only 22 per cent for using their personal judgment.

On the other hand, the Forest Service people, 34 per cent said "group," 44 per cent said "use personal judgment."

The administrators preferred having the member use his own personal judgment, 49 per cent to 47 per cent.

Both members and administrators agreed that other people, non-members, should be allowed to attend and to participate, but should they be encouraged to attend and participate?

Well, the members said yes, non-members should be encouraged, 47 per cent to 34 per cent.

The administrators said no, 61 per cent to 29 per cent, probably assuming that they've got enough headaches already.

And, of course, I think that goes back to the gold-fish bowl problem of trying to deal with delicate and controversial issues in public. (I'd like to say more about that, but I won't.)

I want to say in conclusion that I think there ought to be an advisory board system that's comprehensive in structure. We must recognize there cannot be a comprehensive structure to advise administrators when there is no comprehensive administrative structure. I know that. Although I raise the question, why couldn't you people meet with the Secretary of Agriculture's Board -- or have they met? -- or do they meet anymore? I don't know. Or the Park Board. (Maybe you "don't like that class of people," I don't know. But why not?)

I know there are good political and bureaucratic factors that have to be considered. But I don't know if they are good reasons. Let's start at the bottom and we'll have to start with some sort of local identifiable unit, a forest, a district. I think an advisory body at this level should combine representation of the unique local interests with broader national or regional concerns. While there should be some sort of tie-in this is not necessarily requiring everybody on the local board to be on a board higher.

Perhaps there should be somebody from the state or national boards who visits the local board, as Supreme Court Justices used to do when they were on circuit. Thus there would be sort of an ex-officio member on the local board who didn't have the local interest or perspective.

There is a lot to say on behalf of using the state as a basis for an intermediate level because the state's role in the Constitutional picture.

Some tie-in with state government may be useful and should be considered. Certainly there should be some overlapping between this intermediate board and both the district and the national board or boards.

Next, there should be a national board or boards to advise those departments and/or bureaus with national concerns. We recognize that the BLM is predominantly but not entirely concerned with Western issues. Some of the other agencies have more of a national, or at least a more broadly spread, if more thinly spread, responsibility.

It seems to me that the President's Environmental Quality Council might be plugged into this some way as something of a super board. It's already there and might as well be used. I think there ought to be a statutory basis for this arrangement.

Statutory bases can introduce rigidities, especially regarding membership categories. But it seems like a fair trade to get some permanence. A statutory base will probably bring greater Congressional involvement, since if Congress passes the law, for a while at least they'll perhaps be interested in what they have established. Maybe some member of Congress will attend meetings or Congressional staff members may be sent or minutes may have to be filed with Congress.

Our survey showed that members favor a statutory basis, 66 per cent to 25 per cent; but administrators oppose, 66 per cent to 27 per cent.

There may reflect some misunderstanding because of the way the questionnaire was written. Administrators might have said, "I will indicate in my answer what the law is, not the way I want, because I'm only a Government employee." I don't know, but I suspect administrators would rather not be tied down by laws.

The representatives who are on the advisory board should be "representative," they should be skillful, energetic. This means if I were prescribing the bases for membership I would have a list of categories, including an open-ended category to make a place for new interests and new concerns that are constantly developing regarding the public lands. Certainly there should be some participation by people in local government. And boards should be interconnected and perhaps even interdepartmental to some extent.

I think there ought to be an overlapping of terms with maybe six to eight year consecutive limit. Some of you might not like that idea, but let's put it down and start the debate.

I also recommend that there be orientation sessions and seminars, possible conducted by a university under contract to the department or departments involved, where we bring together the members of the district and intermediate and national boards for various kinds of presentations by the agencies and by people outside the agency.

This would be especially useful for the general board member who did not represent a specific interest.

Thus, I think there should be a program to train all members. Some orientation session could bring together these several hundred people for a week-long seminar.

I recognize there is a limit to the time citizens can spend on board business, because one can't be on a district board, an intermediate board, and read all the material one would receive and attend the meetings besides. I belong to one commission which has sent me at least eight feet of material in the last six years. No one wants that much stuff.

Perhaps the membership should include poets and women. Why are there no women on the Board? I won't mention representation of minorities.

And finally, boards can always function better. They can be improved. For example, 3H lead pencils, nine speeches. And, certainly you want some information about what the meeting is about before you come.

In conclusion I want to say that I think our democracy is in peril. We must develop more channels of communication between our citizens and our Government and get more feedback in ways which do not involve debating things endlessly and grinding government to a halt.

I think that the resumption of the meetings of this body and its flexibility as reflected by the variety of reports, and committees and subcommittees, indicate that you are on the right track.

Thank you very much.

Battle Creek Allotment Tour
National Advisory Board Council
July 28, 1970

Narrator: Dr. Donald E. Ryerson
Animal and Range Science Department
Montana State University
Bozeman, Montana

Refer to the attached map for reference points.

The tour will enter the allotment from the east side and leave on the west side.

Summary of stops and interest points:

No. 1 Point of interest.

Enter Battle Creek Allotment in the Van Kirk Pasture.

Van Kirk Pasture Grazing Use Record

Year	5/15	7/1	8/1	9/1	12/15 - 3/31
1966		Rest			Graze
1967	Graze			Rest	
1968	Rest			Graze	Rest
1969	Rest all year				
1970	Rest	Graze			Rest

No. 2 Stop without de-busing.
Discussion of Green needlegrass and other plants.

No. 3 Point of interest.

Discussion of Nuttalls saltbush, silver sage, and other plants.

Appendix No. 17
(cont.)

No. 4 Stop and de-bus.

Examine series of headcuts and discussion of erosion processes.

No. 5 Stop without de-busing.

Enter Mule Creek Pasture.

Mule Creek Pasture Grazing Use Record

Year	5/15	7/1	8/1	9/1	12/15 3/31
1966	Graze			Rest	
1967	Rest			Graze	Rest
1968	Rest all year				
1969	Rest		Graze		Rest
1970	Graze			Rest	

No. 6 Stop and de-bus.
Examine Wishbone Reservoir and discussion of aquatic vegetation, waterfowl habitat, and contour furrowing.

Lunch at this stop.

No. 7 Point of interest.

Pit type stockwater reservoir.

No. 8 Stop and de-bus.
Examine dead cactus beds and discussion of causes.

No. 9 Stop without de-busing.
Discussion of Mule Creek Photo Plot #4.

No. 10 Point of interest.

Enter Driskill Pasture.

Driskill Pasture Grazing Use Record

Year	5/15	7/1	8/1	9/1	12/15 – 3/31
1966	G	ra	z	e	Rest
1967			Re	st	Graze
1968	Gr	az	e	R	est
1969		R	es	t G	raze
1970		R	es	t all year	

No. 11 Stop and de-bus.
Driskill homestead site. Examine headcuts, upstream Eight Mile Creek waterway, and discussion of erosion processes.

No. 12 Stop and de-bus.
Examine Driskill Photo Plot #5, downstream Eight Mile Creek waterway, and discussion of erosion processes and plant species.

No. 13 Stop without de-busing.
Discussion of N.W. Mule Creek Reservoir.
Also entering Beckman Pasture.

Beckman Pasture Grazing Use Record

Year	5/15	7/1	8/1	9/1	12/15 – 3/31
1966	Rest		G	raze	Rest
1967			R	est all ye	ar
1968			Rest	Gr	aze Rest
1969	Gr	a	ze	Re	st
1970	Rest		Graz	e R	est

No. 14 Stop without de-busing.
Discussion of E. Beckman Reservoir, tree planting project and movie site.

No. 15 Point of interest.

Horse pasture.

No. 16 Point of interest.

Re-enter Beckman Pastures.

No. 17 Point of interest.

Enter Seven Mile Pasture.

Seven Mile Pasture Grazing Use Record

Year	5/15	7/1	8/1	9/1	12/15 3/31
1966			Rest all year		
1967	Rest		Graze		Rest
1968	Graze			Rest	
1969	Rest		Graze		Rest
1970	Graze			Rest	

No. 18 Point of interest.

Washed out reservoir.

No. 19 Point of interest.

Wildlife exclosures.

No. 20 Point of interest.

Leave Battle Creek Allotment.

No. 21 Point of interest.

Calving and bull pastures.

No. 22 Point of interest (off map).

Otto Ericson reservoir.

REPORT ON THE REPORT OF THE PUBLIC LAND LAW REVIEW COMMISSION

Report of Curt Berklund, Assistant to the Assistant Secretary for Public Land Management, Department of the Interior, to the National Advisory Board Council, Miles City, Montana, July 29, 1970.

Secretary Loesch has mailed copies of the Public Land Law Review Commission's report to the members of the National Advisory Board Council. Most of you have read some or all of this report.

In this respect all of us are in much the same condition -- few if any of us can truthfully say that we fully understand the report in all its ramifications. None of us can predict exactly what would happen if some or all of the recommendations were to be placed into effect.

The scope is extremely wide. Some of the recommendations are highly significant to the Department. We have been repeatedly advised to take the report as a whole, not by parts, and to read everything in context relating each recommendation to each of the other related recommendations. We are trying to do justice to the report, and at the same time to our other obligations.

The report is being intensively reviewed in bureaus and offices. Our reviewers have expressed varied preliminary reactions, as might naturally be expected.

The Department as an institution has expressed no formal reactions or recommendations. Those will come later as individual pieces of legislation are either recommended or opposed, or individual pieces of administrative rule making are proposed, and are adopted or rejected.

The implementation phase that we are approaching encompasses more than legislation, as important as that may be. It also encompasses regulations and administration. May I give you two examples out of many things that will be involved on the administrative side.

First is public land hearings and appeals. You will recall in the earlier stages that the Public Land Law Review Commission held hearings throughout the country to learn what the public thought about public land management. One of the most frequent suggestions was that the system of public land appeals be reorganized.

This has been done. The new system went into effect July 1. I believe that the changes effective on that date have already been described to you by the personnel of the Bureau of Land Management.

A second example was brought out by Director Rasmussen, the request by the Department for an extension of two years of the CM&U Act. Such classifications, as you know, have the effect of segregating or closing lands to some or all of the land disposal laws.

The Classification and Multiple Use Act, by its own terms, will expire December 23. We have requested a two-year extension. The Senate has passed a five-year, but we have indications that we're going to see some opposition in the House. In this regard Director Rasmussen has taken the necessary procedures to carry on in the event that it is not extended.

For a definite purpose, today I shall not dwell on parts of the report which are apt to find general agreement. Instead I shall dwell on certain parts that may be troublesome, at least appear to be troublesome at the present time.

I do this because you as advisors to the Department will likely be called upon to interpret or advise on some of these points.

One of the trouble spots to start with is the proposal to review all existing withdrawals, set-asides, and classifications of public domain that have come about by Executive action. This clearly would be a very large undertaking. It would embrace not only the classifications made by the BLM, but also many National Park System units and most units of the National Wildlife Refuge System. One of our reviewers has suggested that a more practical way to proceed would be to review units where significant questions have actually been raised.

In the matter of outdoor recreation, our reviews thus far suggest a significant conflict of basic concepts. While the Commission has focused attention on Federal lands, most of which are in rural areas, the Department, through BOR, must view outdoor recreation in terms of over-all needs. Those needs cannot likely be served adequately by limiting the active Federal role only to unique areas or only areas of so-called national significance.

The emphasis on local responsibility for providing local recreation ignores the severe financial plight of many local governments, particularly the major cities, and their inability to meet public needs without direct help from the Federal Government.

The report gives a great deal of emphasis to ways and means of protecting the environment, yet the report seems to reduce these and other conservation measures to a subordinate role where a particular commodity use would be considered dominant.

It is well to recall that Congress has just recently enacted the Environmental Quality Act. We do not have the luxury of waiting to provide ways and means to assure that quality is maintained until other kinds of public land measures have been implemented.

In regard to mining, a troublesome point will be the idea that seems to be expressed that minerals, where they are found, override all other considerations. The report possibly can be read more than one way on this.

For example, Chapter 7 on Mineral Resources does not employ the term "dominant use," but we know that the prominence given to mineral commodities, together with the report's timber supply features, has aroused very sharp criticism in the press.

As you know, the report has received considerable notice in the press. In the Eastern press the reviews have been critical. I have seen some of the Western reviews. In the parlance of show business, one can only say that the reviews and comments have been mixed.

The so-called "dominant use" procedure favored by the report is believed by some to be the primary surface use concept that they're dealing with in this report. "Dominant use," insofar as concerns subsurface resources, must remain in many instances an unknown question, subject to change.

There are many in the Department who favor the existing multiple-use management approach to land-use planning, and disfavor so-called "dominant use."

A great deal of support for multiple-use management concepts has come from this Advisory Board, and many of the groups they represent.

For example, a tangible reflection of livestock industry opinions regarding multiple use was developed during the Commission's studies. The Forage Study contractor, the University of Idaho, asked ranchers for their opinions on land use compatibilities. The contractor reported as a broad generalization that nearly all ranchers are for multiple use.

The report went on to say, however, that even the ranchers are not of one mind as to the definition of multiple use. Almost all are somewhat uneasy as to how it may affect them. A number expressed considerable concern. However, only a few could point to specific examples where the other uses had hurt their grazing on the public land.

Those approaching this from a minerals viewpoint may be interested to know that out of 75 ranchers surveyed, 12 said mineral prospecting and development was compatible, and 17 said it had caused from slight to severe limitations on grazing.

A further important finding in this survey is that four-fifths of the ranchers favored adding new memberships on the district advisory boards to represent non-grazing groups.

While speaking of grazing, it is obvious that the report's grazing fee recommendations are directly in conflict with the fee schedule provided for in the Department's regulations, which was postponed for the 1970 fee year. I am sure that final resolution of this problem will not be easy.

We know from reactions already expressed by several state game and fish administrators that the idea of a general Federal hunting and fishing land use fee will be strongly opposed.

A possible weakness of the report is the lack of data on what the over-all plan would bring in terms of future benefits and what it would cost in comparison with other ways of dealing with the public land problems. Some of the recommendations undoubtedly will be very expensive.

The contemplated land-use planning system assume that elaborate information will be made available, much beyond the present level of things. This, in turn, suggests there might have to be a kind of an interim build-up period before the new system could be fully carried out.

The sweeping proposal to stop all revenue sharing and substitute payments in lieu of taxes undoubtedly will be very controversial. It has been noted, for example, that the Commission's in-lieu-tax formula makes no exemption for Federal lands that are dedicated exclusively to non-commercial uses, from which little or no revenues are received, and which cause little or no expense to state and local administration.

On the organizational side, how to coordinate the Commission's recommendations with other current reorganizational proposals will pose difficult problems. Consolidated regional administration of functions now split among various bureau offices, as proposed by the Commission, undoubtedly will be difficult to bring into being.

From the standpoint of administrative law, the report recommends several striking changes, such as mandatory rule making, mandatory public hearings, and a special channel for judicial review. These ideas may transcend the limited realm of public land law and will likely arouse some varied opinions.

Still another troublesome point is the proposal to repeal the Homestead laws and the Desert Land Act.

This is by no means a new idea. For example, the 1909 National Conservation Commission wrote: "The Desert Land Law might possibly be repealed in toto without harm to the best interests of the people in its public land property."

But just because it is an old idea, or because this new Commission has endorsed it, does not necessarily make it right, or at least it does not make it an easy thing to accomplish.

Direct sale procedures under the 1964 interim Public Land Sale Act have operated efficiently in several instances. Handicaps of the 1964 Act exist, however, as to such matters as limitation to zoned lands, prohibition against certain kinds of deed restrictions to protect the environment, et cetera, and unavailability of installment payments. These are some of the problems that we are now facing.

The report urges that prompt action be taken to satisfy the remaining rights of states to make indemnity selection of lands in lieu of those granted but withdrawn by the Federal Government or previously appropriated by private parties. They recommend classifying, for selection within three to five years, several times the acreage owed to each state and would further require the states to complete their selections from these lands within 10 years.

The Commission recognizes the question of land value is one of the major causes of delay in completing the selection process. They make no explicit recommendation for resolution of this question.

Time will permit me to mention one further point. The thread that runs through the entire report is that the Federal Government receive fair market value for the consumptive and non-consumptive use of public lands and its resources. Is fair market value the top dollar paid by a purchaser because of special circumstances?

As I stated in the beginning, my purpose was to mention some of the report's recommendations that are apt to arouse difficulty as the implementation period proceeds.

6. "Without adequate predator control on public lands there can be no good range management planned. Therefore, we recommend that an adequate predator control program be continued on public lands."

7. ". . . that we support S.3389."

   NOTE: S.3389, 91st Congress, is a bill "To provide for the protection, development, and enhancement of the public recreation values of the public lands." Its popular name would be, "Public Land Outdoor Recreation Act of 1970." Sections 5 and 6 relate to enforcement of regulations.

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